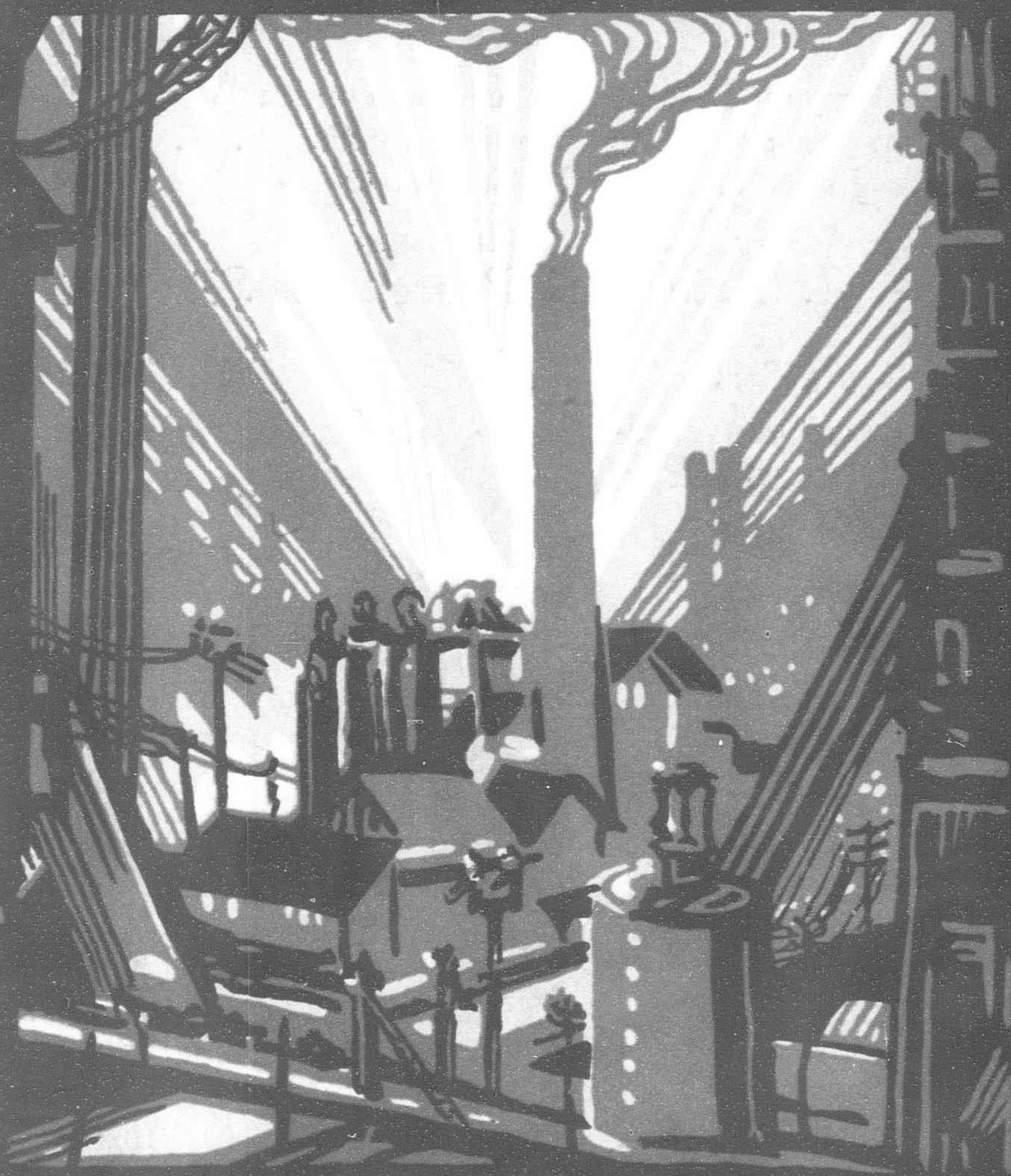


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REVIEW



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ROADS TOWARDS PEACE
By **GEORGE BRONSON REA**
ON RECOGNITION
WHO KILLED THE LEAGUE?

Vol. XXXII

MAY, 1936

No. 5

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ROADS TOWARDS PEACE

By GEORGE BRONSON REA

"No question exists between our two countries that is fundamentally incapable of amicable solution," declared Mr. Koki Hirota in a note addressed last year to Mr. Hull. The American Secretary of State, equally punctilious yet non-committal, rejoined that he would be pleased to receive through the regular diplomatic channels "any suggestions calculated to maintain and increase that cordiality which has constantly marked, since the conclusion of our first treaty, the relations between our two countries." Mr. Hull did not mention the Nine-Power Treaty, the Peace Pacts, Manchoukuo or the collection of Stimsoniana *billet-doux* which led up to the promulgation of the Non-Recognition Doctrine by the United States and its hasty endorsement by Geneva. Nor did he intimate that that doctrine had been accepted as the basis of his own diplomacy or that Mr. Stimson had been retained by the President as an unofficial high-adviser on Far Eastern Affairs. He merely said: "Mr. Hirota, you are showing the right spirit and, now that you feel that way, I will be glad to receive through the Ambassador of Japan in Washington or the Ambassador of the United States in Japan, any concrete proposal or even a suggestion as to how the one obstacle to a restoration of full cordiality between our Governments can be removed." In other words, "What are you going to do about Manchoukuo?" As Mr. Hirota can say or do nothing about Manchoukuo except to restate the adherence of his Government to a policy from which it will never deviate, the incident was closed. So began and so ended an essay in modern diplomacy.

An Old Chinese Custom

As though by constant reiteration, a fancy becomes a fact, this old Asiatic custom seems to have been accepted as a basic rule of the new diplomacy. Chinese and Russians seem to have a positive mania for formulating plans, broadcasting policies and devising slogans or editorial catch-phrases, and then congratulating themselves on the accomplished fact. As Chinese officials promulgate laws and proclaim paper reforms and then point with pride to these evidences of progress in self-government, so the usually reticent and cautious Japanese are acquiring the habit of announcing new doctrines, affirming as a certainty amity and economic co-operation with China, dogmatizing on their indisputable rôle as the sole stabilizing influence in Eastern Asia and then deluding themselves into believing that it is all over but the shouting.

In effect, their diplomatic utterances of the past few years have been confined largely to ringing the changes on these legitimate national hopes and aspirations and, it must be confessed, preparing to make good on them in the only way that such policies can be made to stick. The other interested Powers who, for many years, believed that Japan would always back down before combined pressure, are now convinced that she can no longer be kept in leading-strings by mere bluffing. The bluffed has turned bluffer. The other players, uncertain as to how far she may raise them, are afraid to call her hand. Behind their smiling, courteous and correct poker fronts, they are chipping along, piling more and more "snow on Fuji," while strengthening their hands for the showdown. Japan will not be permitted to take the pot on a busted flush. She must hold the winning hand.

In the case of American-Japanese relations, it is seemingly the correct thing to close our eyes to realities and harp monotonously on the old thesis that there are few differences between the United States and Japan incapable of amicable adjustment, citing the Immigration Laws, the Naval Treaty, trade relations, quotas, tariffs, the oil laws and the open door in Manchoukuo. All of which is obviously true. All these differences are susceptible of amicable compounding. But behind these minor American-Japanese issues looms the larger and more formidable obstacle to good-understanding arising out of the creation of Manchoukuo and America's refusal to recognize what Japan has done or to concede to the people of that state their right to set up in business for themselves. This, the United States contends, has been done in violation of treaties. To support its stand, it then devised and enacted into international law a new doctrine to fit the case and refuse recognition to Manchoukuo.

Goodwill Messages

Japan apparently, prefers to disregard this issue as negligible, holding confidently to the belief that in due course the world will accept the accomplished fact and she will be forgiven her part in creating the opportunity which led to the establishment of the new State. We are reminded of this state of mind by the dispatch of a spontaneous message addressed to Premier Hirota and signed by 29 prominent Americans, expressing hope for a new era in American-Japanese relations and urging that the two nations work for peace.

"Your statement of March 25 to foreign correspondents," reads the text of the cable, "prompts us to send this message. Believing that mutual comprehension is a necessary antecedent to dignified and respectful esteem; and deploring among nations the unreasoned antipathies which are the perverse heritage of the passing generation:

"We, the undersigned, wish and express through Your Excellency to the people of Japan our desire to look forward to a new era of Japanese-American relations.

"We wish to break away from the tradition of provocative statements and have our words arise only from the common sentiments of both nations. We know that there exists a dominant public opinion which requires and will support policies which place the interests of the whole people above that of any self-seeking group or individuals.

"As this opinion becomes articulate, it will discourage the tendencies of any who, through ignorance, selfishness or political ambition, would foment a misunderstanding that will serve ultimately for destructive purposes.

"It is not difficult for thoughtful and courageous men to have steadfast faith in a future that will be fashioned in an understanding chastened by the somber memory of past mistakes and enlivened by an honest and proud friendship.

"We shall await the further evolution of the policies of Japan and the United States with sincere hope that we may discover therein reflected the creative ability of our two great nations to grasp generous ideals and weld them into an admirable and enduring reality."

To which Mr. Hirota promptly replied :

" Please accept my sincere thanks for the cordial message to the Japanese people and convey my gratitude to your distinguished friends, who, by lending their signatures, have, I trust, erected so many guiding beacons indicating the path of lasting friendship to their peoples. The Japanese people, I assure you, share your desire that we may enter upon a new era of American-Japanese relations and, on their behalf, I pledge our earnest efforts to improve them."

The Deadlock

So begins another essay in modern diplomacy and there for the moment the incident ends. Once more both sides face a deadlock, waiting for some official move that will pave the way for concrete negotiations. Which side will take the initiative in facing these problems in a realistic manner? Premier Hirota is firmly committed to uphold, even to the use of force, what Japan has done in Manchoukuo. It is the very keystone of his diplomacy, the basis of his policies, from which he cannot swerve. The American Government is equally committed by the terms of the Stimson Doctrine not to recognize what Japan has done. This is the issue neither side has the courage to face. The future of American-Japanese relations hinges on finding some common ground for reopening the case.

As Japan cannot and will not recede, the problem reduces itself as to whether or not the United States can revise its decision and still retain its dignity, its honor, and conception of duty towards China. Was Mr. Stimson justified in taking such a firm, uncompromising stand and committing the American people to a policy and program which now stands as an almost insuperable barrier to good relations and peace?

If the American Government is to adhere to its purely legalistic stand on the sanctity of treaties, after all that has transpired in Europe these last two years; if it continues to base its policies on the Open Door and the integrity of "China"; if it insists on maintaining Japan in an inferior naval position, while holding out encouragement to Soviet Russia, pouring arms, munitions and bombing planes into China; leading Nanking to believe that it will support it morally and financially while advising it not to prejudice its case by recognizing Manchoukuo; it is a waste of time to indulge in further exchanges of messages of goodwill.

Peace and good relations between the United States and Japan rest on an answer to the one question that has been consistently ignored and by every possible device and pressure prevented from being injected into the controversy at Geneva or brought before the people of the United States or Latin America in open forum and debate. The question that must be answered is: **Are the 30,000,000 people of Manchoukuo entitled to take advantage of any opportunity to free themselves from oppression and set up their own government?**

The Case for Manchoukuo

On its face, this is not a question that the statesmen and diplomats who drafted and promulgated the law denying to these people their right to rebel against injustice and then refusing recognition to the accomplished fact, are competent to pass judgment upon. The self-appointed judges directing our Far Eastern policies, will never voluntarily revise or reverse their decision, nor is it reasonable to suppose that they will welcome any open and frank public discussion that may swing American opinion against their verdict. Yet, if a solution to American-Japanese difficulties is to be found, they cannot always be permitted to act as prosecutor, judge and court of appeal in their own cause. There is a higher court that must pass final judgment on the rights of the downtrodden people of Manchuria to freedom and self-government. That court is American public opinion. The people of the United States by tradition, by their example, by their political faith and creed, cannot, without stultifying themselves, deliver an adverse judgment on the rights of any people seeking freedom from oppression. If these questions be approached from fundamental principles instead of a rigid legalistic interpretation of treaties, a way could be found for the American Government to modify its position without loss of prestige and enter upon that new era of peace, goodwill and understanding that the peoples of both Japan and America so earnestly hope and pray may be ushered in.

Let us stop and seriously ask ourselves: **Has Manchoukuo a case?** Chinese war-lords and their foreign-educated spokesmen, answer, No! They reject the right of the people of Manchoukuo to any voice in the management of their own affairs. The foreign-recognized faction, temporarily in control of the capital at Nanking, upheld by the League Covenant and the terms of the Nine Power Treaty, holds firmly to the right to impose its rule over all sections of what was once the Manchu Ta-Ching Empire.

And because of this outside intervention in the internal affairs of China, this determined attempt to impose the rule of one war-lord or one faction over one quarter of the earth's population, the civilized world has been forced to witness the most sanguinary internecine wars that have disgraced modern history, in which at least thirty millions of poor, defenseless, hardworking and splendid people, asking only the boon to work and the right to live, have been sent callously to their deaths. These facts and figures challenge refutation, an indictment of a selfish Western policy that places profits and trade before the basic laws of Humanity.

Geneva, concerned with establishing and consolidating its own authority and power as the super-state, while tacitly admitting the right of the people of Manchoukuo to a change in their form of Government, insists that this change must be brought about within the framework and under the supervision of the League, that law and order must be preserved by an international police force acting as trustee for the foreign-recognized faction at Nanking; that Manchoukuo indisputably is an integral part of China, and must remain so.

Japan, whose national security has twice been imperilled by the absence of law and order in Manchuria and, confronting the inevitability of once more having to stake her existence as a result of the failure of China to discharge its rudimentary international obligations in these regions, insists that Manchoukuo must remain a buffer state, independent and sovereign, but under her tutelage and protection, pending such time as it can stand alone and perform the functions which geography, international law and good neighborly relations, impose upon it.

The United States, far removed from any direct consequences of these chaotic, disruptive and menacing conditions, has its own peculiar conception of the case for Manchoukuo, derived from past interventions, declarations of policies and a rigid and legalistic adherence to terms of treaties devised to interpret and enforce respect for its viewpoint.

Notwithstanding all these interested viewpoints, a case for Manchoukuo remains, opposed to the claims of selfish and unscrupulous Chinese war-lords, detached from any ruling or verdict proclaimed by Geneva, and outside the scope of treaties which arbitrarily included its territory as an integral part of a country which for centuries was a conquered dependency of its rulers.

The Rights of Minorities

As a result of this clash of conflicting interests and opinions, the people of Manchoukuo for decades were shorn of their just rights as human beings and subjected to the most humiliating and degrading servitude. As has happened in all other parts of the world since the dawn of history when whole communities have been deprived of their rights by selfish and unscrupulous interests, they have patiently awaited a favorable opportunity, taken the law into their own hands, freed themselves from oppression and set up their own government. Because they invoked these basic principles of human justice, they are now condemned by Nanking, by Geneva, and by Washington, as violators of the law. Recognition has been denied and they are warned that they must again bow their necks to the yokes of their taskmasters and take their accustomed place in the category of subject peoples to be ruled by tyranny and terrorism.

There is no other interpretation possible to the Stimson Doctrine. Its enactment into international law by a League Resolution has encouraged Nanking to prepare for the reconquest of Manchoukuo, while every bandit and communist chief north of the Yangtze, looks forward to again fastening himself on the now fairly prosperous and contented people and carving out a "living" for his rabble army. The Stimson Doctrine, reduced to its lowest terms, says that these peoples are slaves and must remain in the bondage to which we consigned them in 1900 when John Hay arbitrarily declared their Homeland as an integral part of the Chinese Empire, a fiction that has since been written into and legalized by a succession of treaties signed without their knowledge or consent.

For the sake of argument it may be conceded that these people were densely ignorant of their rights as human beings and, like the tribes of South America under Bolivar, had Liberty thrust upon them; it can even be admitted that they were encouraged and prodded from the outside into declaring their independence and entering into an alliance with Japan. There may have been no spontaneous revolution or majority demand for a change in their form of government. This is all beside the point. If less than one per cent of the peoples of Russia enrolled in the Communist Party and one quarter of one per cent of the peoples of Cathay inscribed in the membership of the Kuomintang, can set themselves up as the sole governing class and with the recognition, support and sympathy of the outside world, impose their rule over the rest by terrorism, surely it would not be difficult to find amongst the 30,000,000 people of Manchoukuo an equal percentage of Manchus who are justified in seizing upon any opportunity to restore their rule over their own Homeland and of allying themselves with any foreign Power that will guarantee their independence.

A Handful of Manchus

Or, as Lionel Curtis in *The Capital Question of China* puts it, in countries like India, China and Russia, which contain between them two-thirds of the inhabitants of the entire world, it is not the masses who matter, "the mere handful of educated peoples who are breaking away from the past is the dominant and vital factor." Curtis may be a brilliant economist, but he knows nothing about the real China. The mere handful of intellectuals who pose as leaders of the new movement in that country are, in their vast majority, the product of American colleges, stuffed with the ideals of Democracy and Western principles of government who, on their return to China, have quickly subordinated their newly acquired and undigested learning to the main chance. Nanking and Shanghai are filled with them. They are on the pay-roll of every provincial war-lord, bandit-chief and Communist leader to give respectability abroad to their employers' depredations. They are the apologists, the window-dressing, hiding from the world the shameful picture of spoliation and rapacity taking place under the so-called program of unification, of nationalism and the "evolution of a liberal, humane and just government." The cynicism and mockery of it all, challenges belief.

The whole diplomatic machinery of this huge racketeering system was turned over to the bandit war-lord of Manchuria to prosecute his case against Japan and the people of Manchoukuo at Geneva. The Minister of Foreign Affairs at Nanking was his appointee, his confidant and henchman; the Chinese assessor and aides who accompanied the Lytton Commission, his right hand man and advisers (the assessor then went to Geneva as his personal delegate) while another Geneva delegate was the premier of China when his father ruled the roost from Peking. These celebrities, official delegates of the "Republic of China," were advised at Geneva by an ex-American assistant secretary of state. This is typical of the group of educated, high-minded, forward-looking representatives of China, who, at Geneva, took full advantage of the League machinery to prevent their victims or their counsel from presenting Manchoukuo's case to the world. They were the instruments of tyranny, the slaves of a Master whose power for evil had terminated with the declaration of independence by the New State. The Despoiler alone could appeal for justice before the Court of Free Peoples at Geneva. His victims did not exist. They had no rights. The court was established to protect tyrants and hold their victims in perpetual submission.

If Mr. Curtis is right about China, then a mere handful of enlightened Manchurians who have broke with the past, are the dominant and vital factors in any further discussion of the rights of Manchoukuo and its independence. With the evidence of what has happened to the peoples of China under the guidance of the "mere handful of educated officials" at Nanking, where it becomes clearer and clearer that the old spirit of family enrichment at the expense of other families is the paramount motive of government, a similar group in Manchoukuo may well be pardoned if it declined to meekly accept such a travesty on justice and good government. We cannot set-up law for the benefit of a minority political party in Russia and another in South China and then deny the application of the same law to an entirely different tribe in Manchuria which both Moscow and Nanking hope to subject and exploit in the time-honored Asiatic manner.

The Fallacy of the Lytton Report

There has been entirely too much loose thinking, school-boy reasoning, ignoring of history, of facts, figures and statistics, in regard to the racial and tribal complexion of the peoples which form the bulk of the population of Manchoukuo. So-called experts, year-book compilers and other authorities are all too prone to copy each other's figures and deductions and harp on the mass migration movement from North China during the period 1923-28, as proof that the inhabitants of Manchoukuo are ninety per cent Chinese and, that they are entitled to sovereignty by reason of their occupation of the land and overwhelming numbers. Yet it can be proven from these same statistics that from 1885 to 1931, not more than 7,000,000 Chinese entered Manchuria and remained there. All this imaginary mass immigration reduces itself to the movement of seasonal laborers returning to their homes in North China after the harvest. In 1907, while still under Manchu rule and before the bars were let down to admit freely Chinese immigrants, the population was variously estimated at from sixteen to twenty-one million. Of these, the native Manchus, Bannermen-all, were the owners of the soil and the Chinese who entered Manchuria under passports issued by the Banner Corps Headquarters at Peking, their tenants. These Manchus, native Manchurians, "sons of the soil," "born in the state," did not die off or disappear. They are there to-day in the same proportion and their representatives are ruling the country under the guidance of the Japanese. If there were only 100,000 of these native Manchurians behind the movement for independence and now in control of the government, they have a better right to impose their authority over their own Homeland than can be advanced by the Kuomintang or Communist minorities in Nanking or Moscow.

These irrefutable facts have never been permitted to enter into the controversy. When presented to the League Assembly, together with over seven hundred signed and sealed memorials certifying to the desire of these people for independence they were thrown into the waste-basket, that is, deposited in the archives of the League Secretariat. The defendant could not be heard in his own defense. He was to be sold and disposed of like cattle. Even the usually alert and careful Japanese, responsible in the first instance for compiling the population figures of Manchuria and classifying all who were not Japanese, Koreans and Foreigners, as "Chinese," are reluctant to admit their mistake. The Chinese, who had no statistics of their own, flooded the Lytton Commission with these Japanese semi-official compilations as proof that ninety per cent of the people were Chinese, and clinched their case. The Japanese still write books and reiterate that the population of Manchoukuo is ninety per cent Chinese, an absurdity on the face of it, an argument which supplies ammunition to their enemies, and destroys the case for a people they are obligated to uphold. But these original inhabitants of Manchuria remain. They are there to-day, deep rooted in the soil, inarticulate, with no advocate to voice their wrongs or grievances.

These people and their legitimate and responsible spokesmen at the head of the Government of Manchoukuo therefore reject the verdict of the League and the implications of the Stimson Doctrine and declare that the law-breakers are those who have denied the principles upon which their own liberties have been founded and have used their strength and influence to defy the fundamental law which governs the universe and the ever upward march of mankind.

Manchoukuo asserts that it is no law-breaker. Its people have broken no treaties. Its case stands on its own merits, founded squarely on elemental principles which can be set aside only by repudiating all those higher concepts upon which the Rights of Man, Democracy, Self Government, Self Determination and Human Progress are predicated.

The Geneva Star Chamber

The case for Japan based on her obligations under the Covenant and the Treaties, was closed when her Delegates walked out of the Assembly Hall at Geneva and its Government withdrew from the League of Nations. The rights of the Manchurians to rebel against tyranny and set up their own government were never permitted to come before the Secretariat, the Council or the Assembly. These people had been prosecuted, judged and condemned by a fact-finding Commission acting as a court *in situ*, which brought in its own verdict and then dissolved itself. There was no appeal to any

higher court. The Stimson Doctrine, then in full force, ostracized the new State and made impossible any presentation of its case. The people of Manchoukuo simply did not exist. They had no rights, no case. Human cattle they were, the property of their war-lords, with the iron of the Changs branded deep into their buttocks.

Not even the Inquisition under Torquemada, the Star Chamber of Henry VII, or the hang-em-quick methods of the monster Jeffreys, proceeded in such an arbitrary manner. Without limitations from any rule of law, the League disposed of the case for Manchoukuo by summary court-martial proceedings in which the defendant was not even conceded the right to plead either direct or through counsel, the most cruel miscarriage of justice ever perpetrated on an oppressed people seeking recognition of their just rights and alleviation from their suffering.

To contend seriously, as did the members of the Lytton Commission, that sovereignty rests with the 5,000,000 Chinese laborers who swarmed into Manchuria after the Russo-Japanese War (as the result of Japan's initiative in developing the soya bean industry) and remained there as permanent settlers, is perhaps the most astounding argument ever put forward to support a weak case and defraud a people of their inheritance. Should this rule apply in other parts of the world, should the right of self-determination be put to a plebiscite, the Japanese, numerically the strongest group in Hawaii, would decide as to what flag should fly over the new American Gibraltar. Or, to bring the picture nearer home, if the million or more Mexicans now in the United States were concentrated in Arizona, New Mexico and Nevada, and acquired the right of suffrage, it would not be long before these former Mexican territories would be dominated politically by a people whose next move would be towards reunion with their Mother Country. There are other interesting angles to this controversy which are not necessary to stress here. Sufficient to emphasize that for the first time in history, a decision has been made by men of sense, gravity and wisdom, conferring sovereignty on a minority racial group whose members in most instances, entered the country illegally, in order to enforce a preconceived verdict, give reality to a fiction and effect to a fallacious doctrine.

The League as an instrument for preserving the balance of power in Europe and upholding the Versailles Treaty may have considerable justification for its existence (though even in this it has failed), but when it admits to full membership and a seat on its Council, semi-barbarous states whose despotic rulers maintain their place and power by the sheer weight of their armies and hold the peoples in subjection by conquest and terrorism, it betrays the very principles upon which it was founded and makes impossible the appeal of any oppressed people or minorities for escape from their bondage. The attempt to fix the status of one quarter of the world's population by recognizing one war-lord or faction as representative of the whole and admitting his hireling to a seat on the Council on a full equality with the delegates of self-governing democracies, eliminates any possible hope that the slaves of autocracy, militarism or despotism can ever escape from their shackles.

The League as it is composed, dared not concede to Manchoukuo its right to speak in its own defense, as any appeal to first principles would have destroyed the case so laboriously and speciously built up against Japan on a violation of the Covenant and the Treaties. To all requests on the part of Mr. Matsuoka, the Chief Japanese Delegate, that Manchoukuo be heard in its own defense, the Assembly turned a deaf ear. Had not the representative of Manchoukuo been a newspaper proprietor, he would even have been refused admission to the open sessions of the Assembly. Four times, pressure was brought to bear to bar the representative of Manchoukuo from the League Building and each time only the fact that he could produce the proof filed in the League Library that he was a *bona fide* newspaper publisher and editor, entitled him, under protest, to a renewal of his *carte de admission*. The incident is mentioned to indicate how formidable was the influence and pressure exerted to prevent the case for Manchoukuo from being communicated even unofficially to the individual delegates. Every communication forwarded by Manchoukuo to the League Secretariat with a request for its circulation amongst the Delegates, was followed by strenuous protests from the Chinese Delegates. Had not the Japanese Delegation officially requested the circulation of Manchoukuo's documents, they would never have got any further than the Secretariat waste basket. Yet all through the League session, the Chinese Delegates flooded the Assembly with newspaper clippings, fictitious reports and

communications from Chinese and Koreans in America, Honolulu and all over the world, denouncing the right of the people of Manchoukuo to any voice in the management of their own affairs. In effect, the most unscrupulous and illegal methods were employed at Geneva to conceal the facts, discredit the defendant and prevent his case from being heard.

But the case for Manchoukuo remains. It cannot be disposed of in such a summary manner. It has history, principles, precedents, justice and right on its side. The thirty million people of that State are entitled to self-rule, to independence, to recognition of their sovereignty. The principles upon which the New State were founded are elemental, inherent in the aspirations of all self-respecting communities. These principles appeal to the American and Latin American peoples where purely legal arguments can have no effect on public opinion. They also appeal to the peoples of the British Commonwealth of Nations. No Anglo-Saxon can deny their force without repudiating his own faith, his creed and the traditions of his race.

The Conquering Manchurians

It is childish to argue that the presence of the Japanese army is all that preserves the independence of Manchoukuo, that if these forces are withdrawn, Nanking or the Young Marshal would quickly re-establish their rule over this territory. It is well to remember that for nearly a decade, a Manchurian war-lord ruled China from Peking and that even in 1931, at the time of the Mukden incident, his son had conquered and occupied North China and had made Peking his capital, where he posed as "the Co-Ruler of China," on an equal footing with his war-lord colleague in Nanking. Should the stabilizing presence of the Japanese army be withdrawn, conditions would revert automatically to those which prevailed during the decade 1921-31. A Manchoukuo army of 400,000 men backed by the largest arsenal in Asia and with the wealth of the thirty million prosperous farmers to draw on for funds would again assert its rule. Who will be bold enough to assert that these Manchurians would not again invade, conquer and impose their rule over North China?

If Canton could employ the best military brains of Moscow to organize and lead its armies and Nanking can be advised by the foremost generals of Germany, surely Manchoukuo is equally entitled to seek similar aid from Japan. The restoration of the *status quo ante* 1931, would merely invite another wholly insensate and sanguinary struggle for supremacy with the chances that the end of the war would find the Manchu Emperor once more seated on the Dragon Throne in Peking. The Manchurians, whether of native Manchu, Mongol or North China stock, have the same traditional outlook on the territory south of the Wall, a land of milk and honey, of easy living, of silks and satins, of temples and palaces, of beautiful concubines, a land to be invaded, conquered, looted and held for their enjoyment. It is part of their mentality, one that no new fangled ideas of nationalism will ever eradicate, especially a nationalism imposed by a Cantonese faction, whose language they cannot understand, and who they detest and reject as foreigners. The only check on these peoples, the sole guarantee that such wars will not be permitted to again plunge the people of Manchoukuo into poverty and misery and ruin the investments of Japan upon which their prosperity has been built up, is the presence of that same Japanese army, that Nanking, the League and Washington would like to see withdrawn.

Japan Stakes Her Honor

Japan is committed to respect scrupulously the sovereignty and independence of Manchoukuo. The obstacle to any modification of the League verdict and revocation of the Stimson Non-Recognition Doctrine, is the suspicion that Japan does not intend to honor this pledge, that in due course she will annex the new state by the same methods that she absorbed Korea. Japan must therefore search her conscience and ask herself whether or not she has contributed to Manchoukuo all the support and assistance within her power to dispel this suspicion and attain the objective for which she has staked her future and her honor.

The policy of Japan toward Manchoukuo is fixed and irrevocable. She stands or falls on the methods she applies to win the confidence, the friendship, the goodwill, the trust and the loyalty of the people of Manchoukuo. Investment of capital, development

of their resources and bettering their economic condition, is not all there is to winning them over. Should she fail to bind them to her, should she incur their suspicion, their ill-will and hostility, she will pay in tears and sorrow for her mistakes. The day may come in the not distant future when Japan may again have to stake her existence on the plains of Manchoukuo. On the loyalty of its thirty million people, on their gratitude for benefits conferred, hinges the fate of her Empire.

While There is Yet Time

The League of Nations and the United States have disposed of Japan's case based on their one-sided interpretation of the treaties, but her cause is not lost as long as the case for Manchoukuo remains. It may well be that the principles underlying the founding of Manchoukuo will yet change the verdict against Japan. Japan lost her case at Geneva and carried Manchoukuo with her. Manchoukuo may yet win her case on the principles involved and carry Japan with her. On the success of this appeal to world opinion to establish Manchoukuo's right to an independent status, hinges not only the vindication of Japan but the future of peace in Eastern Asia. If Manchoukuo is independent and sovereign, if her cause is just and stands on its own merits, then she should be conceded every opportunity and facility to present and defend it along lines that will help to overcome prevailing false impressions. The highest interests of Japan, of the 30,000,000 people of Manchoukuo, the stability of Eastern Asia and the peace of the Pacific demand that nothing be left undone that may assist towards solving these problems by diplomacy while there is yet time to do so.

The very success of Japan's experiment will hinge on her ability to meet the constantly increasing demands on her capital reserves to finance the development of Manchoukuo. For the moment, she has brought a certain prosperity to that country by her continued investments but each year the expansion of industries, construction of highways, railways and other public works, will call for greater and greater outlays. The time must inevitably arrive when Japan will require financial assistance. Where will it come from? As long as the Stimson Doctrine forms the basis of American diplomacy, American capital will never co-operate with Japan in Manchoukuo or North China. We have only to read what Mr. Tyler Dennet had to say in the February number of *Current History* to understand the difficulties of surmounting American opposition to what Japan has done. This retired historian of the State Department and now President of Williams College, in close touch with official opinion, says:

"Let Japan go ahead. The cosmic process is on our side. Only let us make sure that we do not involve ourselves by loans, trade agreements or political arrangements in any situation that in the end will carry us down in the destruction which for Japan is probably not immediate, but none the less inescapable."

Treaty-Breakers All

There is only one deliverance from Mr. Dennet's forecast. The road to peace, to co-operation and the ultimate success of Japan's experiment, leads through the recognition of Manchoukuo as an independent and sovereign state. The time is fast approaching when the Great Powers must call a halt to their secret preparations to punish unilateral law-breakers by collective or common action and settle down to discussing the best way to preserve peace. Japan may or may not have broken her treaty pledges, but her judges must ask themselves whether China did not also violate her commitments and provoke Japan to act in self-defense. In the same manner that the Allied Powers broke their treaty pledge to disarm after placing Germany at the mercy of the smallest of her neighbors and, which has led them again to the verge of war, so these same powers after limiting the size of Japan's armaments and binding her by treaties that operated to impair her right to self-defense, remained quiescent and unconcerned while Soviet Russia built up the most formidable military and air force in Europe and Asia, and China, after pledging herself to reduce the size of her armies to less than a million men, has increased them to 2,500,000, with another million or more armed bandits, communists and irregulars contesting with the regular forces for supremacy. China then set out to wage war within the Peace Pacts by severing economic relations with Japan and boycotting her products.

There is no moral or legal difference between the refusal of Great Britain, France, Italy and others, to pay their war debts to America

and the repudiation of the Versailles Treaty and League Covenant by Germany and Italy. If we can find a way to maintain friendly and intimate relations with our European War Associates even to the point of forgiving them their just debts, how much easier is it for us to pardon another Nation impelled in sheer self-defense to take steps to protect its existence?

Whose Hands are Clean?

Is it fair and honorable to blacken the character of a friendly Nation because of a single lapse from the path of international rectitude, considering the severe provocation that forced her to resort to self-defense? Is there any other country which has so faithfully and honorably discharged its obligations towards the United States as Japan? "**He who comes to equity, must come with clean hands.**" Have we never strayed from the straight and narrow path in our dealings with neighboring states? Let us search our hearts and probe deep down into our diplomacy with Mexico and we will understand something of what Japan has had to contend against with China, only on a far greater scale. Japan has been compelled to fight two wars for her very existence because of conditions in China and the inability of its government to discharge its natural and lawful obligations. Instead of acquiring a vast empire as the United States did as a result of its walk-over war with Mexico, Japan, after emerging victorious from two life and death struggles, was bludgeoned by superior might out of the legitimate fruits of her victory over China and then diddled and buncoed out of cash indemnity at Portsmouth by the suppression of the most vicious secret treaty of modern history. The United States got what it went after for almost nothing. Japan was robbed of the fruits of her sacrifices. What right have we after our past misdeeds to marshal world opinion against Japan, condemn and brand her as a treaty-breaker and promulgate new impromptu laws that hold her up to perpetual reproach and lay her open to further dangers, while we hob-nob on terms of intimacy and cordiality with other Nations soiled with the same crime, and who, after refusing to abide by the terms of their contracts with us, now boast of how they have balanced their budgets—at our expense! We do not proclaim officially our opinion of these defaulters, but concentrate our spite and venom on Japan, who has done us no harm and caused us no loss.

All the principal powers of the world except Japan are now banned under the Johnson Act from raising loans or selling their securities in the United States. Our "Great Sister Republic" comes under the ban, but holds our sympathy. Ways are now being found to evade the law in favor of our protégé. Japan, the only important power who has never defaulted on her financial obligations, whose credit is unassailable, is on the other hand, barred from seeking financial assistance in the United States by the operation of the Stimson Doctrine. In the event of a future war in which her very existence will again be staked, she cannot look to us for sympathy or assistance as long as Mr. Stimson's ruling stands as the basic feature of our new Far Eastern diplomacy. We would condemn and consign this great and friendly people to ruin and defeat for a treaty violation and associate ourselves in perpetrating this injustice with a group of States who, by violating other obligations, have burdened the taxpayers of the United States with debts that pass the ten billion mark! And for what? To uphold and enforce our privilege to give away more of the peoples' money to another Asiatic state. Wonderful diplomacy, astonishing statesmanship, typically American, devoid of common sense.

The Road of Good Intentions

Yet Japan, at the very worst, has merely followed faithfully the example we set for her in the Philippines. If, in doing so, she broke the imperishable law of the Nine Power Treaty and kept within her legal right of self-defense under the Peace Pacts, she has not conquered or annexed the territory of her neighbor. She has not promised, like we did in the Philippines, to grant their people independence, when, **in our opinion**, they had reached that stage where they were competent to govern themselves. She started out on her **career of conquest** by recognizing immediately the sovereignty and independence of Manchoukuo and then emulated our example in Cuba and the Philippines by loaning a group of her best administrators and experts to help guide the new state along the path of self-government. Whatever mistakes she

may make in Manchoukuo will never equal the ruin and misery we brought to the people of Cuba by placing them under an economic servitude ten times worse than political bondage. We cannot, at this late date, by a single act of repentance stand forth purified and sanctified as the anointed of the Almighty to judge the rest of the world.

Our intentions are good. There is not doubt of that. But like all good intentions they pave the road that leads to its legendary destination. Our protestations of friendship, assurances of goodwill and championship of peace, while clinging to our rôle of Supreme Judge of the World's Morals and thundering anathemas against law-breakers, merely lubricate the chariot wheels of Mars and pile up profits for the munitions makers.

The League, the United States and the Signatories to the Nine Power Pact are in no moral position to denounce Japan for a breach of the treaties in the face of these realities. They cannot deprive the people of Manchoukuo of the boon of liberty and self-government to bolster up their recognition of a Southern Chinese faction which by race, language, customs and traditions is no more qualified or entitled to rule over the Northern Manchus, than the Mediterraneans over the Scandinavians.

Conscious of the righteousness of her cause, Japan has turned her back to the world and is preparing at great expense and sacrifices to defend her position. But her cause, the cause of peace and good-understanding, is not lost until the world definitely rejects the inalienable right of the people of Manchoukuo to invoke principles upon which all other peoples have founded their liberties and been admitted into the Family of Nations. Manchoukuo may be classified as a "protected state," but it is no different from several so-called "self-governing, independent states" whose status as such is recognized by the League of Nations.

It may seem from the evidence before our eyes that that it is destined to be always a "puppet," manipulated by the Japanese army. It is overlooked that strategical reasons demand for the present and some time to come, a firm military control over the affairs of the new State, but as its borders are straightened out, banditry suppressed and relations with Mongolia placed on a firm footing, this military domination will gradually give place to civil administration. The day must arrive when the link between Manchoukuo and Japan will reduce itself to a mere military alliance with a small Japanese force on the ground to carry out its objects. Japan is on record. She will live up to and honor her pledges. Once Manchoukuo is able to stand on its own feet, there is every reason to believe that the much discussed Japanese "Monroe Doctrine," will, like its American counterpart, resolve itself into a policy of good neighborhood in which any threat from the outside will become the concern of both nations.

Breaking the Deadlock

The thirty million people of Manchoukuo place implicit trust and confidence in Japan's good intentions on which she has staked her honor and future. They therefore stand on the merits of their own case, which they consider just and right. They insist that they have a good case, a strong case, a righteous case, one that should merit the sympathy and support of all true lovers of Liberty the world over. The cause of Human Liberty takes precedence over all treaties, covenants and agreements, and, when these truths can be brought home to the American people, supported by the documentary evidence now consigned to the archives of the League Secretariat at Geneva, testifying in signed and sealed memorials from every public body and association in Manchoukuo to their desire for independence, a way can be found for the reconsideration of a verdict which now stands as the one obstacle to American-Japanese friendship. When the official ban on Manchoukuo in the United States is removed and her case can be presented openly in public forums, there is no doubt of what the American people will have to say. Sooner or later, the world must acknowledge the justice of Manchoukuo's invocation of the inalienable right of its people to rebel against oppression, misrule and injustice and set up their own government. Given a fair field, and a free forum, Manchoukuo can break the deadlock that now makes almost hopeless any solution of American-Japanese problems through regular diplomatic channels.

Is it not time to discard this phrase-mongering ambiguity about peace, understanding and good-neighborly relations, clear our minds of the mass of diplomatic jargon and false thinking based on a purely juridical condemnation of Japan and get down to first principles

and the realities of a case that has never been given a fair hearing either at Washington, at Geneva or in the press of the world? We talk peace but prepare for war. No statesman in Japan or the United States seemingly has the courage to break away from diplomatic red-tape and the purely legalistic viewpoint and approach these questions from the basic rights of the people of Manchoukuo. Until that is done, it is useless to keep harping on Pacific intentions and a solution of these problems by a renunciation of policies both sides are committed to uphold.

There is no difference between Japan's strategic problems and those of Great Britain except in so far as the Washington Treaties placed Japan in a position of inferiority and impaired her right of self-defense. As Great Britain refuses to have her hands tied in regions where her vital interests and security may be endangered, so Japan has been compelled to appeal to the same law in her own sphere. That she means to keep and exercise this primary right and will fight before surrendering it, should be patent by now to all the world. With her, it is not a question of honor, or sanctity of treaties, but a matter of dire necessity, of life or death. Whether or not these rights are recognized by the other Powers is something which concerns Japan alone. It has nothing to do with the rights of the people of Manchoukuo.

The American people will never go to war across the Pacific to enforce or uphold a doctrine devised for the maintenance of the territorial integrity of a vast amorphous state whose undefined frontiers are merely an imaginary dotted line winding and turning across the "Roof of the World," snaking down into the mysterious depths of Central Asia, meandering along the vague confines of hidden Mongolia and frizzling out to nothing along vast tracts which bewilder the geographer and render uncertain any definition of the pertinent question propounded by the astute French diplomat (Briand) at the Washington Conference: **What is China?**

Again, "What is China?"

Nobody could answer this question. China was a figment of the diplomatic imagination, conjured up to give political substance and reality to a fiction and erect a formidable modern self-governing state on the ruins of what was once a vast empire, held together as all other empires, past and present,—by Force. And when that force became insufficient to bind the parts together and hold the conquered peoples in subjection, the Manchu Empire, following the inescapable law of history, crumbled and disintegrated into its component parts. Only the hammer of overwhelming force can again weld the parts together into a homogeneous political whole.

The Chinese case at Paris and at Washington was carried by the American Delegation. The Nine Power Treaty, ignoring the question advanced by Briand, set up the fiction of a unified China on the foundation of the old Manchu Empire and erected it into a respectable international personality. The definition of China as now written into international law and the treaties, is one supplied by American diplomats whose primary motive was to preserve and perpetuate equal opportunity for American trade in the last important world market free from European dominance. There may have been other considerations, such as creating a balance of power in the Western Pacific, preserving China as a field for Christian uplift and education or the evolution of a Great Sister Republic to offset imperialistic forms of government prevailing in other parts of Asia, but these, obviously, could not be written into the record. The Open Door must remain as our only interest in preserving the old Ta-Ching Empire intact under a military despotism masquerading as a full-fledged self-governing republic.

The Balance Sheet

The balance sheet of the Open Door Doctrine discloses that we are out-of-pocket about \$65,000,000 annually, that in fifteen years we are in the red at least a billion, that for every dollar of profit we extract from our exports to China we hand back one and a half, if not two, for charity. It furthermore shows that our commercial investments in China aggregating \$130,000,000, are overshadowed by the British stake of \$1,750,000,000 and the Japanese investments which now equal the British, with French, Belgian and other investments totalling perhaps another billion. When these figures are understood by the American people, they will never go to war to uphold any doctrine to defend their right to give away more money.

If these figures are only approximately correct, the bottom drops out of the Open Door fallacy and with it goes the political and territorial integrity of the state the doctrine was meant to uphold. In view of these incontrovertible facts, further adherence to the Stimson Doctrine of Non-Recognition based on the theory of an indivisible China, can only tend to prolong and aggravate an already tense and explosive situation. The time has arrived when the United States must decide whether or not economical reasons justify it in adhering to past policies. If, in the face of the facts and figures, we decide that our highest interests will be best served by perpetuating these policies, then we must repudiate our pledges to the Filipinos, hold on to and fortify the Philippines and build up quickly a fleet strong enough to enforce respect for our viewpoint.

Build Up or Shut Up!

"Foreign policies," as Mr. Hughes once pointed out:—"are not built upon abstractions. They are the result of practical conceptions of national interest, arising from some immediate exigency, or standing out vividly in historic perspective. When long maintained, they express the hopes and fears, the aims of security or aggrandizement which have become dominant in the national consciousness. . . . We are fortunate in our detachment from many difficulties and dangers which oppress the imagination of other peoples: but we should resist the tendency to indulge in self praise. For when we have a clear sense of our own interests we are just as inflexible as others."

Is this inflexibility confined solely to our own sphere as covered by the Monroe Doctrine or does it extend across the Pacific to our Far Eastern policies? If it does, there is nothing more to be said. We know what it means. Let us pause here and recall what Theodore Roosevelt had to say about the Monroe Doctrine. **"I believe in it with all my heart and soul. But America must possess the power to back it up. I would infinitely prefer to see us abandon this doctrine than to put it forward and yet fail to build up the efficient naval strength, which, in the last resort, can alone make the Doctrine respected."** That was good straight talk and were T.R. alive to-day he would say the same about the Open Door Doctrine. We must not only have the naval strength to back it up, the clear conviction that its enforcement is essential to our security and vital interests, but we must possess the spirit and the will to stake our existence to uphold it. To persist in declaring our adherence to this Doctrine **and all its derivatives** without the necessary overwhelming naval strength to command respect for our viewpoint, is criminal folly, an invitation to humiliation and disaster.

It is not enough for us to accept without question the glowing promotional Colonel Sellers-like estimates of Commerce and State Department Sinophiles, who tell us that when the *per capita* trade of China is equal to that of Australia, the total will be \$65,000,000 a year which a stable and prosperous China will be paying an outside world for her imports; that if the 500,000,000 Chinese will only consume a prune or a raisin a day, the fruit farms of California will not be able to supply the demand. Long before this dream comes true, before this exaggerated *per capita* consumption can be reached in China, the country will be fully industrialized and its coolie-manufactured products will have swept American-made goods from the world's markets.

These are mere day dreams, part of the Open Door propaganda to uphold the integrity of China and the building up of a huge navy. But the real figures are there in the record for all to read and make their own deductions. If, as is the case, these figures prove conclusively that our position is not economically sound, if examination shows without a shadow of doubt that there is no real conflict of interests between the United States and Japan, that she is our best customer, agent and friend, who we would antagonize and sacrifice to chase the will-o-the-wisp of Chinese profits, then good judgment would seem to indicate that our naval strength in the Pacific be limited to a force sufficient to assure the security of our own shores against any emergencies.

The figures as they now stand on the balance sheet are not complete. They tell only one side of the story. If the maintenance of the Open Door and the Stimson Doctrine is to lose for us our vast cotton trade with Japan; if Japan continues increasingly to purchase her requirements elsewhere and encourages the Chinese to cultivate this staple to the point where, within a few years, she will

free herself of dependence upon the United States for the supply of this staple, the interests of the Southland must be considered. No section of our country will meekly submit to having its prosperity and markets destroyed to build up prospective outlets for the manufactured products of another section. What will it profit the Nation as a whole, if to gain a few million dollars in trade with China, it loses ten times the value of that trade with another country?

The Southland Has the Say

The recent discussions on the Neutrality Act in which one side argued that countries afraid of not being able in time of war to draw on America for its raw materials, would either take steps to produce these commodities themselves or would form trade alliances with nations willing to supply them if the need arose, thus averting the danger of a serious dislocation of economic life, were quite oblivious of the great big fact that the effects of this serious dislocation with respect to two of our major agricultural products, were already being felt. Had the same timely discussions preceded the promulgation of the Stimson Doctrine and similar measures adopted to protect our economic interests, the Solid South would not be facing the loss of its principal cotton market.

The demand for sanctions, economic boycotts and other penalties against Japan, together with the League's endorsement of the Stimson Doctrine and the threats emanating from Geneva that, in due time, its attention will be turned to chastening Japan, has convinced the government of that country that should the emergency arise, her supply of raw material on which her main industry depends for its existence, would automatically be cut off. So Japan is taking no chances, writing her own insurance policy against disaster by cultivating intimate trade relations with other cotton producing countries while financing and encouraging the Chinese to cultivate the staple. One Chinese economic expert recently declared that in five or six years, China will produce all her own requirements. It may take several years to turn the trick, but, in the end, the Good Old Solid South will pay the bill for a bungling Republican doctrine that a Democratic administration has not the sense or the courage to repudiate, even when it threatens the prosperity of States which for decades have kept the Party from sinking into political oblivion.

The cotton planters of the Southland, their representatives in Congress, their spokesmen of the press, their Chambers of Commerce and their votes on election day have the last say as to our continued adherence to an un-American Doctrine devised to uphold and give reality to a fiction. As the years pass and other countries supply the cotton needs of Japan and their principal market dwindles to nothing, they will have time to ponder over the causes which brought ruin to their plantations. Long before that time arrives, another section of the Southland, the tobacco growers of Virginia and North Carolina, will also be bewailing the loss of their once profitable market in China and they also will come too late to a realization of the fact that in our intense devotion to the interests of that country we have sacrificed the prosperity of our own. It is up to the Democratic South to say which road the Nation will follow in its future Far Eastern policy.

Out on the End of a Limb

And that decision cannot be long deferred. It must come within the year, before the expiration of the naval treaty. On it, will depend whether or not we are to spend further billions for the defense of a policy that has already put us in the red at least two billion dollars since John Hay, at the instigation of British interests, promulgated it as the cardinal feature of our diplomacy. On our decision rests the answer to ultimate peace or war in the Pacific. If we hope for peace the way must be cleared by scrapping doctrines we are not prepared to, nor do we intend to uphold, by force.

If the Open Door policy is not worth fighting to uphold, then its derivative, based on the Peace Pacts goes with it. In our approach to any consideration as to whether or not we can with honor and dignity recede from the Stimson Doctrine, lies the first step towards reconciliation with Japan and the laying of a firm foundation for future peace in the Pacific.

The League, on which Mr. Stimson relied to enforce respect for his new interpretation of international law, is about to expire. It leaves the United States holding the bag, committed to a policy that

(Continued on page 205)

ON RECOGNITION

By GEORGE BRONSON REA

"The League recommends, and the United States concurs, in that the League will act as Trustee in Manchuria for the war-lord of their choice, while they co-operate with him for the establishment of a strong central government somewhere in China Proper. If you reject our solution, we will refuse to recognize you! We will penalize and ostracize you and bring all the weight of our diplomacy to bear in order to reduce you to submission. But while we are doing this, you must keep the door open so we can trade with you. Your political morals may be bad, but your money is good."

Manchoukuo accepts the verdict and replies: "Come and do business with us.... If (Americans) cannot buy Manchoukuo's agricultural products the same as other countries, because our farmers will demand a higher tariff to protect their products, don't call Manchoukuo names and accuse it of closing the door if its necessities compel it to import from those who do buy its cereals. Manchoukuo is doing its best with its limited resources to create a new market for many manufactured goods that it can buy better and cheaper in the United States than in any other country. Its wealth is largely agricultural. Soya beans are the mainstay of its farmers. America

does not buy any of these beans or the oil and cake expressed from them, but other countries take over 3,000,000 tons annually. Germany has purchased over a million tons (Manchoukuo's most important customer), but this year, in order to protect home agricultural interests, its government placed a prohibitory tariff on further imports of soya beans. Manchoukuo now faces the loss of this market. There will be a surplus of over two million tons of beans in Manchoukuo this year, and if the people are to live, they will have to plant wheat and look forward to supplying the Far East with this staple. Now suppose that instead of purchasing American automobiles, trucks, road and farm machinery, Manchoukuo should say to Germany: buy our beans and we will buy these manufactured materials from you. Should Manchoukuo adopt this barter system along the same lines as Brazil and other countries and exchange its main crop for German mechanical products, the market would be practically closed to the United States for everything except oil, cotton and tobacco. Manchoukuo would then be accused of closing the door to American trade and of violating its pledges. As Manchoukuo is not recognized, and is still considered a part of China, a violent press propaganda would be let loose upon the new State."

IN the above words, the writer stated the facts concerning Manchoukuo and its future before the George Washington Law School in November, 1933.

They are recalled at this time to point the moral to the Manchoukuo-German Trade Agreement signed on May 1, and to draw certain conclusions. The trade agreement comes as a sequel to the visit of a German Economic Mission to Eastern Asia and two months of study and negotiation. Although the details of the pact have as yet not been made public, its main features obviously must bring an increase in the export volume of soya beans to Germany against a proportionate exchange of German manufactured products. Next to Japan and China, Germany has occupied the chief place in the export trade of Manchoukuo, and in any discussion over equal opportunity, the open door, and reciprocal trade treaties, automatically becomes the most interested party. At one time Germany purchased approximately a million tons of Manchoukuo's soya beans, or one-third of the total exports, but owing to internal conditions in 1934, the Nazi Government placed certain restrictions on further importations which seriously affected the prosperity of the New State at a time when it was called upon to relieve the sufferings and misery of its agrarian population.

The trade balance between Manchoukuo and Germany was all in favor of the former and in these days when governments are closely scrutinizing their balance sheets, it was natural that Germany should make an effort to bring about some measure of reciprocity that would expand markets for her manufactured goods. That much has been achieved by the new agreement. To the extent that German materials enter Manchoukuo, there will be a corresponding decrease in importations from other countries.

A Step Toward Recognition

Whatever may be the opinions of others, the new trade pact represents a definite step towards the establishment of formal relations between the two countries and ultimate *de jure* recognition. The German press lost no time in interpreting the pact as nothing more than a technical agreement entered into by a semi-official

German trade board with the Manchoukuo authorities for procuring foreign valuta and cannot be construed in a political light as a recognition of the new State by Germany.

It was not very mannerly on the part of the German press to fling this uncalled for slur at Manchoukuo after its Government had openly manifested a desire for closer and more amicable relations. The connection between the Nazi Government and its press however, would seem to indicate that the former went out of its way to put Manchoukuo in its place. It sounds too much like, "your morals are bad but your money is good, we will do business with you but will not associate with you."

The only crime that Manchoukuo is guilty of was to sever its connection with a system which held it as the special preserve of a bandit-overlord and, in so doing, broke certain political agreements entered into by other tyrants with foreign governments desirous of creating one vast market for their exploitation. That these treaties violated solemn Abdication Pacts which became the Fundamental Law of the Republic of China was callously ignored by both sides. It ill becomes the press of another people held in bondage and inferiority by the terms of an enforced treaty which they have violated in order to recover their status of equality and independence of action, to pass judgment upon Manchoukuo. Germany is the last nation that should throw stones.

It only goes to prove again that principles and rules which apply to Europe cannot be extended to Asia. Had the German press openly and frankly admitted that the new trade agreement with Manchoukuo was the first step towards ultimate *de jure* recognition of the reality, instead of slavishly adhering to a doctrine laid down by a League devised to keep Germany in an inferior military position, she would have broken the deadlock and heaped confusion on her foes. The German press moreover, overlooked the fact that *de facto* recognition of a new state can be established outside of regular diplomatic channels. When, in March 1921, Great Britain concluded with Russia a similar trade agreement, it was interpreted by the Foreign office and by the courts as equivalent to *de facto* recognition.

The British Method

The British procedure in these matters is more realistic and practical than that of any other country. The normal policy of Great Britain for over a century has been to insist upon certain conditions as precedent to the grant of *de jure* recognition to a new state or government. It has required first, a reasonable assurance of stability and permanence, second, evidence to show that the government commands the general support of the population and third, has insisted that such government prove itself able and willing to fulfil its international obligations. As Herbert Arthur Smith points out in his new work on *Great Britain and the Law of Nations*:—

"In the period following the conclusion of the Trade Agreement it became fairly clear that the Soviet Government had definitely defeated the forces opposed to it and was likely to be permanent. How far its security rested upon the real assent of the people and how far upon force it was difficult to say. No attempt was ever made by means of a plebiscite or free elections to ascertain the general will of the Russian people, and it was notorious that in actual practice the authority of the new government was only enforced by coercive measures of the most drastic kind."

The Soviet note of May 11, 1922, addressed to the Geneva Conference, affirmed what it called a "principle of right," in the following words:

"Revolutions which are a violent rupture with the past carry with them a new juridical status in the foreign and domestic affairs of States. Governments and systems that spring from a revolution are not bound to respect the obligations of fallen Governments. The French Convention, of which France declares herself to be the legitimate successor, proclaimed on December 22, 1792, that 'the sovereignty of peoples is not bound by the treaties of tyrants.' In accordance with this declaration, revolutionary France not only tore up the political treaties of the former regime with foreign countries, but also repudiated her national debt. She consented to pay only one-third of that debt, and that from motives of political expedience."

The Soviet oligarchy, the only persecuting state in Europe, whose rulers have denied their God, suppressed the Family, stamped out by terrorism every semblance of Liberty, repudiated its most solemn engagements, abrogated the Law of Nations and violated every tradition and concept upon which Western civilization and international morality has been erected, now presides in the person of its Commissar of Foreign Relations, over that League of Free Peoples that only a few short years ago it stigmatized as a group of bandits. Red Russia, gory with the blood of bourgeois and Kulak liquidation is now an accepted member of that Concert of independent, self-governing states which set out to make the world a better place to live in! Because it took advantage of the only opportunity that could have been presented to secure its independence and avoid falling under the Red Rule of Moscow, Manchoukuo is an outcast, not fit to be associated with!

A Non-Recognition Note of an American statesman under the portentous name of "Doctrine" takes precedence over the laws of God, of Humanity and Civilization. Red Russia with its revolutionary theories of international obligations, repudiation, terrorism, atheism and revolution which she intends to force upon all the world, becomes the exponent of the New Dispensation, the Ally of America in maintaining the *status quo* in Eastern Asia. Sanctified commercialism. Such is Western morality.

The Role of Manchoukuo

More modest than Red Russia, little Manchoukuo, conforming to the usages of international law, accepts its obligations and has assumed without quibble such proportion of the debt of China as corresponds to its ratio of customs returns. The only similarity between the Soviet and Manchoukuo stand is that **the sovereignty of peoples is not bound by the treaties of tyrants**, confining this principle however to those treaties which have arbitrarily included the Homeland of the Manchus as an integral part of a country that for three centuries was a dependency of their rulers.

A British commercial mission visited Manchoukuo two years ago. A Belgian mission is now following in the footsteps of the German group. It is reported to have made arrangements with the Kochin Koshi (Sino-Japanese China Development Company) to co-operate in the Economic development of North China with Japanese capitalists. The Italians are also seeking favorable

trade advantages in Manchoukuo. The only country that has evinced no interest in co-operating with Japan for the development of Manchoukuo is the United States. To such an extent has it carried the Stimson Doctrine, that an American Economic Mission which visited Japan and China last year did not even send its delegates to investigate conditions in the new State. Even American army officers and government officials are prohibited from travelling through Manchoukuo. If they desire to make the Trans-Siberian trip, they must entrain at Vladivostok and proceed to Europe via the Amur route. The Stimson Doctrine, rigidly adhered to on the part of the American Government, stands as a bar to any American commercial mission visiting the country and an obstacle to American trade expansion in those regions.

The mere fact that this doctrine was immediately sponsored by the League, setting up over night an entirely new definition of recognition, at variance with the established practice of all great states, places the American government in an embarrassing position, as one by one, other states enter into trade and *de facto* agreements which establish friendly relations and pave the way towards *de jure* recognition. Mr. Stimson reversed the traditional recognition practice of his own government by making the conditional Peace Pacts the fundamental law. Without waiting to ascertain whether or not Japan had acted within her rights to resort to self-defense under that treaty, Mr. Stimson assumed that she had not and hastily drafted and announced a new theory, that completely undermines the accepted practice of diplomacy as applied to the recognition of new international personalities, and laid down a new law during the process of an investigation which, for all practical purposes, constituted a charge from the bench admonishing the jury to bring in a verdict in conformity with the new ruling. Its adoption by Geneva, left the League Commission of Enquiry no option but to obey orders. The verdict of the fact-finding commission was accepted as final, and the American Government was shouldered with the responsibility for a new law, which the Powers of Europe are now doing their best to circumvent, each in its own way.

Confronted with the promulgation of an impromptu law based on the assumption of her guilt before a verdict could be arrived at, and then the ignominy of being adjudged guilty before the world as a result of this deviation from the rules of the game, Japan has done what any other self-respecting nation would do under similar conditions. If Manchoukuo does not exist, if it is only a figment of the imagination, a shadow state, how can other states expect to do business with it?

Japan's Point of Vantage

Japan, however, promptly recognized the sovereignty and independence of the new state and, as a consequence, is the only country that legitimately can take advantage of the opportunities afforded for investment of capital in the development of its resources. There is some discrepancy in the reports as to the total amount of Japanese capital that has flowed into Manchoukuo since its independence, but is not far from Yen 800,000,000. The result of the Stimson Doctrine has been to hermetically seal the door to all other foreign capital and to transform the territory into a closed preserve for Japanese exploitation. The tense strategic situation that has followed the independence of the New State, necessitating constant vigilance on the part of the Japanese Army, has operated to further close the country to foreign investments.

The Stimson Doctrine, lacking the force of sanctions to uphold it, instead of obstructing Japan, has merely facilitated and encouraged her complete commercial domination of the country. When Sir John Simon stood out at Geneva against any and all sanctions against Japan which would inevitably have led to war, the bottom dropped out of the Stimson Doctrine and it should have been abrogated there and then. The British were the first to recognize that a doctrine resting on moral force alone, would never change the reality of the situation. Practical as always, the British dispatched an Economic Mission under Lord Barnaby to see what could be done in getting some Manchoukuo orders. That it returned with only promises which have not materialized, is due perhaps to the fact that Britain hoped to make it a one way selling proposition. It stood to reason at that stage of the proceedings that the Japanese industrialists were not inclined to forego the benefits in orders for materials in a market their own capital had created. There were too many urgent railway and other industrial enterprises fitting into their strategic program, that called for immediate investments of large amounts of capital, which under the circumstances created

by the Stimson Doctrine, they alone could supply. That they preferred not to share the benefits with those who had stigmatized them as law-breakers and closed all avenues for financial co-operation in the development of Manchoukuo, is not to be wondered at. That is human nature, also a strict business principle laid down as a basic rule in all British loans for foreign railway and industrial purposes.

Had the whole question of Manchoukuo been approached from a broad realistic angle and some consideration given to the historical rights of its people at Geneva, instead of confining the case to the violation of a political agreement and insisting upon its territory being indisputably an integral part of China, the Powers by now might have been enjoying full and equal opportunity in the development of one of the richest areas of the world. Had Mr. Stimson not interfered, there were many ways out of the difficulty at that time which would have preserved the conventions and maintained Manchuria open as a field for the investment of foreign capital. It is needless to go into them here.

Too Much to Expect

We cannot call a people names, marshal world opinion against them, refer to them as puppets, stigmatize them as law-breakers and enact laws to prevent other nations from recognizing them and then expect them to be grateful. We cannot say to them, "you are unfit to associate with but your dirty money is welcome if we can make a profit out of it, and then expect them to flood us with orders for materials and hand over to us valuable mining and other concessions. After all, these Manchurians are human beings reacting to the same emotions as ourselves.

It is understandable that the Japanese with an open and preferred field for their activities are not keen about whether Manchoukuo is recognized or not. As a matter of fact, Japan has never demanded from China, nor intimated to the foreign powers a wish that Manchoukuo be recognized. All that she has requested is some practical method for working out some form of co-operation between Japan, Manchoukuo and China, so as to put an end to friction in the North. Although not stressed, such a request implies on its face recognition of the reality, and is one of the reasons why China has shown so little interest in Mr. Hirota's three points. And as long as China is buoyed up by the hope that the League will act, and the Stimson Doctrine undergoes no modification, it is hardly likely that she will enter into any co-operative agreement with Japan that carries with it recognition of Manchoukuo.

It ought to be clear by this time even to the most prejudiced mind that if Japan set out deliberately to annex or absorb Manchoukuo, she is going about it in a very strange and unbusiness-like manner. A conquering nation that starts out by encouraging the people to set up their own government and declare their independence and then immediately recognizes the independence and sovereignty of its intended victim, enters into an alliance with it for mutual protection, restores to power its hereditary ruler, then consents to the abolition of extra-territoriality and surrender of its railway zone (its strategic life-line), invests nearly a billion yen in four years under the laws of the new State to develop its resources and in other ways commits itself to a line of policy which calls for the most scrupulous respect for the integrity of the new State, is certainly not playing the game according to accepted Western methods.

On the exploitation side what do we see? The construction boom which brought a temporary prosperity and resulted in an excess of imports is now about to end, giving place to a more normal economic situation in which exports are again tending to produce a favorable trade balance. For the first time since 1929, the world price of soya beans is again over Yen 100 per ton. Exports last year reached 1,800,000 tons at an average price of Yen 82 per ton, followed since January by a rising market. If the present upward trend continues during the year, Manchoukuo will again be well along the road to a more balanced trade with the assurance of greater prosperity for its farmers. Basic industries, essential for the security and well-being of the state, have been brought under government control and if these have been financed exclusively by the Japanese, it is because all other sources from which to draw capital has been closed to the State by the operation of the Stimson Doctrine. Call it a "puppet" State, print Manchoukuo in quotation marks, insist that it is a closed Japanese preserve, admit that the door is open but that the entrance is clogged with Japanese barring out all others, repeat all the wise-cracks, puns and slurs which have filled the columns of our press to slander and deprecate

the new State, but the reality remains. With it goes the inescapable fact that Japan has staked her honor and her future on the faithful performance of her pledges.

The Latest Fiction

Of course, there must be something wrong. The Chinese cannot conceive that Japan will faithfully live up to her pledges, so we now have the latest story as to how this "militaristic, conquering empire" is preparing to accomplish its evil ends. It is so typical of the Oriental mind and has evidently had such wide confidential circulation that it must be repeated. The consort of Emperor Kangteh is said to be in ill health, a sort of wasting sickness that the doctors cannot diagnose. So, the story goes, this is clear proof that she is being slowly drugged to get her decently out of the way so the Emperor can marry a Japanese princess, elevate her to Imperial rank and beget a sturdy heir to the Throne. Emperor Kangteh after assuring his succession will ascend the Dragon and join his first beloved spouse on High. During the minority of the new boy emperor, a nice benign maternal uncle will run the show as Regent. Good old Dalai Lama stuff, a perfect medieval or Oriental thriller that has been communicated to gullible foreigners to explain how Japan will circumvent her pledges, absorb the Empire of Manchoukuo and beat the Stimson Doctrine. And there are those who believe it. All this to accomplish something that could have been done any time with safety since the Japanese Army took over control of the territory.

Is it not about time that the United States and the Great Powers of the League awoke to the realities of what is transpiring in Eastern Asia? It is now almost a certainty that the people of the United States will never go to war to enforce the Open Door Doctrine, the Nine Power Treaty, the Peace Pacts or their derivative laid down by Mr. Stimson. The League, on which Mr. Stimson based his hopes for support in enforcing his ruling has demonstrated its utter incapacity and unwillingness to function collectively in any question involving the use of sanctions or force.

The League is now *caput* and even if reorganized, its future effectiveness will depend largely on its composition. If it is to include despotisms like Soviet Russia or war-lord monstrosities like China, it can never arouse the enthusiasm or command the respect of decent men throughout the world. It will fail. The future League must be erected on a European foundation, leaving the two Americas and Eastern Asia to work out their destinies in some form of regional understanding such as is now being proposed by the League of Bolivarian Action in Central and South America. Any reshuffling of the cards in such a new deal must necessarily throw China, Manchoukuo, Japan and Siam together and, if and when, the Philippines are cast adrift by the United States, the Islands will automatically take their place in the same set-up.

There is only one alternative to this. The American people must tax themselves to build up the most powerful navy in the world, one that will be able to enforce single-handed policies which if adhered to, must inevitably land the United States into a disastrous conflict. I say single-handed advisedly, for it will be many, many years, if ever, before the main British battle-fleet can safely trust itself so far from its home base as to co-operate with the American Navy in any major adventure in Far Eastern waters.

There is only one prospect for peace in our lifetime, and that must come from some reconsideration of policies and doctrines whose hasty promulgation stands to-day as an insurmountable barrier to good relations with Japan. It is a waste of time, energy and money to try to circumvent this situation by bolstering up Nanking with loans or credits in the hope that she will be able to stand out alone against Japan and do something the combined British and American navies or the League of Nations was unable to carry through. The activities of Leith Ross or the cautious maneuverings in Washington to discover ways of pouring money into bankrupt China to strengthen her resistance against Japan can have no effect on the ultimate outcome.

'Twas Ever Thus

China is China, and all the money in the world poured into her capacious and ever open maw will disappear like water in the sands of the Sahara. Nanking is a poor reed on which to lean to create a balance of power. If persisted in, such a program will only hasten the day for the inevitable explosion and China, as usual, will be the victim and pay the bill.

There is one way out of this mess. If the Nations are really desirous of curbing Japan and assisting China to grow strong, the first step is the immediate abolition of the Stimson Doctrine and the recognition of Manchoukuo based on the historical rights of its people to full independence and sovereignty. Japan's domination of the territory would then be considerably curtailed and its markets opened up to international competition and the development of its industries and resources to international co-operation.

It goes without saying, that there must be some guarantee of stability, some assurance that law and order will be maintained for the protection of foreign trade and investments. This can only be extended through the presence on the ground of a strong Japanese army to defend its frontiers and suppress banditry. Once, however, the security of the new State is firmly established by some new agreement with Soviet Russia and recognition of its independent status by the Powers, the pressure of Japan's army along the North China borders will automatically be released and the fears of Nanking dispelled.

Japan undoubtedly has her own conception of her rôle in Eastern Asia and what is best for China Proper, but there are too many interests entrenched south of the Wall which will act as a brake to any over-ambitious dreams of monopolizing these resources. Japan's first and only concern is security. Once this is assured by some working arrangement with Nanking, the world will hear less and less talk of her schemes of conquest. Japan has not the capital to hog the big things of China Proper. She has all that she can do for many years to come to furnish the further requirements of capital needed for the development of Manchoukuo. South of the Wall, she is handicapped in any large scheme of co-operation, limited to supplying such small sums as may assist in the cultivation of certain crops like cotton, opening of new coal and iron mines and the construction of minor railways. The vast expanse of China Proper remains as a field for international or national investments.

Blocking Japan in Manchoukuo and holding out to China the hope that we will come to her assistance and enforce respect for the Stimson Doctrine is getting us nowhere. It merely serves to stiffen Japan's backbone, inciting her to appropriate larger and larger sums for army and navy expansion and infusing her people with a grim determination to stand or fall on the policies to which their Governments are now irretrievably committed.

The Meaning of A Note

What is the answer to all this? Can a note written by a Secretary of State or a Resolution passed by the League Assembly stand as a permanent, immutable policy, ostracizing and penalizing thirty million people for aspiring to self-government and happiness? Does this Note and this Resolution actually constitute a new rule of International Law, binding upon all Governments and depriving them of any further initiative in exercising their right of recognition? Again, let me quote from Professor Smith's new book:

"The evidence of practice enables us to draw with some confidence a few general conclusions. In the first place, it is clear that the question of recognition is fundamentally a question of policy rather than a question of law. That is to say, there is no such thing as a 'right' to recognition, and every state is entitled to grant or to withhold the recognition, whether of a new state or a new government, upon grounds of policy which must necessarily be determined by itself."

"From this it follows that the right of any state to accord recognition at its own discretion cannot be made to depend upon the consent of another state, even if that state be one from which a particular community has separated itself by successful revolt. In practice, the policy of the recognizing state is determined by the necessity of protecting its own interests, a necessity which compels it to establish regular relations with any government, however formed, which offers a reasonable prospect of stability and permanence."

Little Salvador was the only nation whose leaders had the moral courage and independence to break through the Stimson Doctrine and assert its sovereign rights to act as it deemed best for the advancement of its own interests. The answer of Don Miguel Angel Araujo, the Salvadorean Minister of Foreign Affairs, to the charges that he had violated international law and the law of the League will stand for many years as a classic in the annals of diplomatic repartee. After quoting the Resolution of the Commission Americana de Jurisconsultos at their conference in Rio

de Janeiro in 1927, which, word for word, is almost identical with the rules governing British recognition practice, he declared.... "never has the Republic of Salvador adjusted the conduct of its foreign relations to conform to the interests of the majority—because it was a majority." One very little state that had the courage of its convictions and the backbone to declare and assert its rights against a policy laid down by the majority.

And what is it that deters other Nations from following the lead of Little Salvador? The Great Powers with their fleets and armies are cowed, they dare not follow their inclinations or assert their independent rights for fear that China with her 500,000,000 consumers may retaliate with a boycott against their trade. Dollars and Cents, Pounds, shillings and pence, Francs, Marks, Pesetas and Lire outweigh the rights of Humanity. And the smaller fry like those states of Latin America who have no special love for the League, are held back from asserting their independence for fear of incurring the ire of the Colossus del Norte.

The Nations find themselves in an impasse, hemmed in by a League Resolution on one side and an American doctrine on the other. The only outlet to the culdesac opens to the abattoir. Like a drove of sheep, the peoples of the world are b-a-a, b-a-a-ing and bleating their way towards the gates that lead to doom. No one seems to have the sense to lift up his head and see that the wall encircling the ante chamber of death is merely a flimsy contrivance that would collapse at the first butt of one strong determined bovine male. Even the rambunctious leader of the Teutonic flock who has battered down every encircling wall in Europe, shies at the flimsy device which keeps him in the pen with the others. All that the sheep can see is that outside the stockade stands the terrifying myriads of Cathay frantically yelling and waving their arms to keep them headed towards the slaughter. In answer to their bleats their shepherds point out that there is no escape unless these Celestials change their mind, that is to say, China must take the lead in breaking through the Stimson Doctrine by recognizing Manchoukuo. Then, of course the shepherds can permit their flocks to head the other way, confident that they will have preserved their face and their trade with those 500,000,000 consumers. But it stands to reason, that the Celestials will never take that step of their own volition. China will never recognize Manchoukuo and release the sheep from the pen as long as the United States and the League Powers permit the flimsy and ridiculous Stimsonian wall to stand. The sheep will continue to go forward toward that little gate at the far end.

Is there no escape, no way out? It is a poor rule that don't work both ways, so I will conclude with this last extract from Professor Smith's book:

"In an article in the *British Year Book of International Law* (1926) Sir John Fischer Williams has given convincing reasons to show that serious inconveniences would follow from any rule which made the complete validity of recognition depend upon the consent of the parent state. The rule that the consent of the parent state is not legally necessary for the transfer of territory was explicitly asserted by the Foreign Office in its controversy with Persia over the Bahrein question in 1929."

If that law applies in one part of Asia where Great Britain's vital strategic interests in the Persian Gulf are paramount, and which she duly safeguarded by reservations in the Peace Pacts conceding to her the right to resort to self-defense in that key-region for the protection of India, how much greater force does the same law have in the Far East where the parent state broke away from a treaty-created pretender and, which Japan, for equally vital reasons, recognized as independent?

Or, to carry the comparison further by another example, let us see what was the practice of the United States during the most discreditable period of her history, when her interests were deemed paramount. We will not refer to the Canal Zone or Columbia's refusal to recognize this rape of her territory. That stands by itself. So let us go back to 1859 when the appetite for more of that juicy Mexican territory was "growing with the eating." At that time, a Liberal revolution under Juarez was well under way with its headquarters at Vera Cruz, and Juarez was willing to pay any price for recognition.

At this crisis in the internal affairs of our neighbor, Buchanan appointed Robert McLane Minister to Mexico. He was instructed that, if he found a government in Mexico exercising general authority over the country, he was to recognize it without reference to "the

rightfulness of its existence." At the same time, he was told that the sympathies of the United States were strongly with the party of Juarez, and the fact that that party was not in possession of the capital of the country should not be a conclusive consideration against it. It was not difficult for McLane upon his arrival in Mexico to find in favor of Juarez and to extend to him the full force of recognition by the United States.

In justification of this action, McLane wrote to Cass as follows:

"In any other country than Mexico, I should have had grave doubts in coming to the conclusion at which I arrived, but in view of the very large interest, political and commercial, already involved in the right of way over the Isthmus of Tehuantepec, and with the knowledge that this transit was the subject of present legislation or decrees by both governments, and that the State of Sonora also, which offered so desirable a route from the Pacific Ocean to our Territory of Arizona, was now engaged in a contest with the Central Government in relation to its public domain in that state, in which contest the rights and property of American citizens, were deeply involved, I felt it to be my duty to act promptly in opening political relations with some power, **if such could be found**, consistent with those principles by which I had been instructed to govern myself."

But, we say, that is all past. Now that we have bitten off all that we can digest, we have reformed. Anyhow, Japan signed a treaty with us and seven other nations to **respect** the territorial and political independence of the undefined Republic of China and we will hold her to its terms. Of course, what we did in Latin America under a declaration of policy that John Hay once playfully described, "**is anything the American people choose to make of it at any time, to fit any particular emergency**" and, which the Latin American states never endorsed, is one thing. Our law is *fiat* in the Western Hemisphere. Against the protests of the Latin American states and with only a bare majority vote in the Committee of Thirteen, Wilson forced our Doctrine into

the Covenant of the League, where it becomes the law of the world.

Under such a Doctrine it was obviously impossible for any Latin American state to enter into a multilateral treaty such as the Nine Power Pact to defend its interests against a powerful and, in its opinion, predatory Nation, which arrogated to itself the primary and sole right to intervene in its affairs. John Hay's conception of the Open Door for China, originally a purely trade principle, has, in the course of time, followed his pat definition of the Monroe Doctrine. It is now anything we want to make it. Where we would never build a ship to uphold our basic defense policy we will now appropriate billions for armaments to defend a treaty covering an Asiatic state that some day we may have to go to war to uphold. The interests of a huge, amorphous, disorganized and undefined state in Asia, held loosely together by the largest armies of modern times has become the principal concern of a Nation which is proudly surrendering its basic defense principle in favor of collective action and throwing overboard that doctrine of the Freedom of the Seas that it twice went to war to uphold.

We are now sticklers for the sanctity of treaties, especially those which relate in any way to our dreams of profit in Asia. We will not recognize any change in the *status quo* brought about by Japan. Russia can do as she pleases in Asia, but we draw the line at Japan. We will not recognize what she has done to defend herself against dangers which are fast driving her to take extreme measures to safeguard her existence.

It might be well for those American experts who have set up the Peace Pacts as the fundamental law governing the practice of recognition of new states, to read carefully the rules under which Great Britain has so successfully steered its course over the last century in the recognition of new states and governments. They will then come to the conclusion advanced by this commentator that the Peace Pacts and its derivative, the Stimson Doctrine, sounds the death-knell to human liberties, a gross betrayal of our political faith, our creed, our traditions and everything we hold sacred and have fought over the centuries to obtain.

ROADS TOWARDS PEACE

(Continued from page 200)

burdens it with the protection of foreign investments which outweigh our own at least thirty to one. We must not delude ourselves into the belief that Anglo-American co-operation will stop Japan. It cannot work. That fallacy was exploded when Sir John Simon resolutely opposed at Geneva the application of sanctions against Japan, which, due to America's unpreparedness, Great Britain would have been called upon to enforce. Until there is some guarantee that the American Senate will support a promise, pledge or agreement given or entered into by an American President or Secretary of State, Great Britain, with the lessons of the past ever before her, will never commit herself to any understanding that may align her against an old and trusted Ally that she broke with in the hope of gaining our support. There is more reason to believe that any showdown in the Far East, will find Britain once more standing shoulder to shoulder with Japan for the defense of their mutual interests. Americans should face the realities. They are way out on the end of a very thin limb. So we come to the crux of the problem.

The Highway Towards Peace

No progress towards constructive peace in the Pacific, or stabilization of conditions in Eastern Asia can be made until the fundamental distinction between the treaty rights of the interested Powers and the inalienable rights of the people of Manchoukuo to self-determination and self-rule are understood and clarified once and for all. Without this understanding, the moral conditions requisite as a basis for permanent peace and as an approach to a diplomatic solution to the problems, cannot exist.

The American people must try to understand both sides of the case. They have paid dearly in the past for following blindly the advice of interested statesmen and politicians.

The records will prove that our Far Eastern policies have been guided in the past by officials so sympathetic to China and committed to her cause as to be incapable of unbiased judgment in any crisis. If the United States and Japan are to look forward to a future friendship fashioned on an understanding chastened by

the somber memory of past mistakes, then Americans must take the initiative in undoing a wrong, establishing the facts in the case and basing their future policies in relation to these facts. Our mutual hopes and aspirations and the ability of two great nations to grasp generous ideals and weld them into an enduring reality, can never be attained as long as we deny to the people of Manchoukuo their right to manage their own affairs and appeal their case to the court of American public opinion. We may not like to recognize or admit the justice of Manchoukuo's cause but it seems the only honorable way out of the impasse we find ourselves in.

There is a broad National Highway stretching onwards and upwards, ever Westwards, towards peace, prosperity and security, over which the United States can with dignity, honor and adherence to its traditions, safely travel and find its way out of the labyrinth of treaties and legal quagmires in which it is now entrapped and bogged. That Highway is clearly marked by Signboards erected for our guidance by the Fathers in 1776. It was improved, widened and additional guide-posts erected by Jefferson, Adams and Monroe to regulate the courtesies of the road when meeting with new international personalities. We have strayed from this broad national highway, following an unpaved detour hastily marked out by a Secretary of State who hoped to find a short cut to the goal of international co-operation and universal peace. That detour was never completed. We are now stuck in the mud. We are on the wrong road. It leads to disaster and humiliation, perhaps to the collapse of our civilization. It is time to reverse gears, get back to solid ground and follow the original Signboards.

Let us recognize the right of an oppressed people to invoke the same principles that we ourselves would go to war at the drop of the hat to uphold. Let us place the same faith and trust in the good intentions and honor of Japan that she placed in our promises when we acquired the Philippines and imposed our tutelage over a backward people in the interests of civilization. That way lies the road to Peace, the only way out of the traffic jam of treaties, the maze of official red-tape and the hopeless deadlock of diplomacy.

Who Killed the League?

By GEORGE BRONSON REA



TARDIEU, a very competent and caustic critic, asserts that the League of Nations is dead. Lord Queensborough, Treasurer of the League, resigned his post on April 29 "because it is no more a real League of Nations and cannot function as an effective instrument of peace" (He probably grew tired of dunning a group of bankrupt members to pay their club chits). Temperamental Mexico, who slips in and out of Geneva according to its varying moods, is again disillusioned. Public opinion and a majority of Mexican Congressmen now favor a final retreat from the League, which it joined in the first place only to set up a counter irritant to the Colossus of the North.

A new Pan-American League of Nations is in the making, in which the United States will be permitted to enter only on a plane of full equality with the smallest Latin-American Republic. The initiative for this new line-up was taken by the International League of Bolivarian Action, a Latin-American group of forward looking young intellectuals, presided over by a very active, forceful Guatemaltecan newspaperman, whose labors are just beginning to bear fruit. Panama, with its recent recognition of full sovereignty by the United States, is taking the next step towards the complete severance of the Two Americas from unstable Europe, by proposing at the forthcoming Pan-American Conference at Buenos Aires, the creation of a Permanent Court of Pan-American Justice along the lines of the Permanent Court at the Hague.

The Foreign Ministers of the smaller Northern European Powers have met to consider their future relations with the League. A proposal calling for turning the Balkan Entente into a miniature League of Nations for Southeastern Europe is under discussion. A Mohammedan Bloc of states extending from Turkey to Afghanistan has been formed for mutual protection. In the Far East, Japan declares that this part of the world must combine into one formidable bloc for the advancement of mutual economic and strategic security. The world is again splitting into regional combinations and alliances, the answer of the Nations to the failure of the League to discharge the duties the Covenant imposed upon it.

The British Viewpoint

Only from England, do we hear a voice of protest. The British League of Nations Union declares that the League must survive even if the Covenant be revised. From all sides comes the warning that Geneva's day is over. The fall of Addis Abbaba, the hurried flight of Haile Selassie, the hoisting of the Italian flag over the capital of the slave-hunting Amharras and Mussolini's proclamation that Ethiopia is now Italian territory, drives the last nail in the coffin of the old League. After all, the League has never been anything more than the power behind it, the British fleet and the French army co-operating for one particular purpose. When one end of the combination placed its own interests in Europe above those of the British Empire and declined to apply sanctions against Italy, the League collapsed and "all the King's horses and all the King's men cannot put Humpty Dumpty together again."

Tracing back the causes which have led to its approaching dissolution, officials of the League have been doing some serious pondering over their own follies and mistakes. Information reaches us from the highest sources in Geneva that they realize (when it is too late) the irretrievable blunder committed by intervening in the Sino-Japanese dispute before exploring every avenue of reaching an amicable settlement through direct negotiations between the two disputants. Further, that a still graver error and miscarriage of justice was made in dispatching a fact-finding committee to investigate and report on conditions in Manchuria and then accepting its recommendations as final.

There is now (that is, there was, in March) a strong tendency in Geneva to reopen the Sino-Japanese dispute based on a new report drawn up along lines which will admit discussion of the rights of the people of Manchoukuo to an independent existence. Had the League listened to Mr. Matsuoka and permitted the case for Manchoukuo to be presented and defended at the summary proceedings which condemned Japan and compelled her withdrawal, it would

have brought in a different verdict. In parenthesis, had the League been guided by the two Great Powers whose support gave it life, had it listened to Great Britain and France instead of placing its hopes on American co-operation by accepting without discussion the Stimson Doctrine, it might have pulled through. However, that is another story.

At this grave crisis in the affairs of Western Europe, when the fate of our civilization hangs in the balance, dependent on a re-organized and reformed League of self-governing Democracies, the pampered protégé of Geneva and Washington is again vociferating its claims to equality with those Powers upon whose close co-operation now rests our hopes of the future. The Chinese, watching the demise of the League it knifed at Versailles and then drove home the blade to the hilt five years ago at Geneva, are again demanding a permanent seat on its Council. If it were not tragic it would be comic. The committee on the composition of the Council has agreed in principle to recognize these claims and to ask the Assembly in September to create a non-permanent seat on the council for the "Self-Governing Member State of Asia."

For a New League

If a new and reformed instrument for peace is erected on the ruins of Wilson's hopes, there will be no place in it for nations like China, Ethiopia, Liberia, India and Soviet Russia. Without the League to fall back on, the ability to convert its sessions into tribunals for the trial of Japan and for broadcasting her grievances, China will be thrown back on the one course she has persistently refused to follow. She will then be compelled to enter into direct negotiations with Japan for an amicable compounding of their difficulties.

The only obstacle to a settlement of these questions by direct negotiations has been the hope held out to China by Geneva—and Washington—that the League, in due course, will come to her assistance by applying sanctions against Japan. By thwarting and making impossible these direct negotiations in 1931, the League slipped and paved the way for its own downfall. We stated several years ago that China in her present condition would not only ruin herself but carry Western civilization down with her. Our prophecy is working out.

There is no place in a League of independent, self-governing democracies for military despotisms. Until such time as China can compound her internal problems by compromise and conciliation and show a willingness to discharge her duties to her neighbors, she has no business in a League of free peoples. By conceding to this vast anomalous, unorganized mass the full dignity of a sovereign first class Power entitled to a seat on its Council, the League dug its own grave.

The open refusal of certain parts of China to recognize a Central Government which owes its status as such to the desire of the Powers to recognize any faction for the convenience of diplomatic intercourse and continuity of relations, made difficult the application of treaties or the Covenant to cover her case. The British Foreign Secretary set forth tersely the views of H.M.'s Government on the inappropriateness of the treaties to cover the emergency of 1927 in a note addressed to the Secretary General of the League which he concluded by saying, "that His Majesty's Government deeply regret that there does not appear to be any way in which the assistance of the League in the settlement of the difficulties in China can be sought at present." In other words, when Britain's interests are menaced and the other interested Powers decline to act in concert for the defense of their treaty rights, Britain will take such measures as she deems most appropriate to safeguard her own rights.

As the collective system of the League ultimately broke down by attempting to enforce sanctions against Italy, so the Nine Power pledge committing its Signatories to communicate fully and frankly with each other, meant absolutely nothing when the interests of any one Power were endangered. Britain, who suggested a joint display of force in the Yangtze region, emerged from the crisis as the villain in the piece. In the same way she would have been

the goat at Geneva had Sir John Simon permitted the small nations to vote for sanctions against Japan. Once more, in the middle of a world crisis, when collective action alone would have halted Italy, Britain found herself holding the bag, committed by the votes of the small Nations who would have contributed neither men, money, ships or munitions to the common cause, to go out and do all the fighting. It is really about time that these British League enthusiasts awoke to what it all means. How many times must Britain be left in the lurch before she realizes that there is no such animal as international co-operation when the showdown comes?

Aims of the League

The preamble to the Covenant declares its purpose to be the achievement of international peace and security "by the firm establishment of the understandings of international law as the actual rule of conduct among Governments, and by maintenance of justice and a scrupulous respect for all treaty obligations in the dealings of organized peoples with one another." As Herbert Arthur Smith points out in his recent work *Great Britain and the Law of Nations* :—

"It is clear from this that the states concerned must be 'organized,' and it is equally clear that the general body of international law, as established by previous practice, is only applicable to intercourse between orderly states. This principle also appears in the conditions which the League itself imposes upon new candidates for membership. Applications for admission are submitted to tests framed in the form of questions, of which the following are relevant :—

3. Is the applicant a nation with a stable government and settled frontiers?
4. Is it fully self-governing?
5. What has been its conduct, including both acts and assurances, with regard to (a) its international obligations: (b) the prescriptions of the League as to armaments?

"Had these tests been imposed upon China it is clear that no satisfactory answers could have been returned. But China escaped the tests, since by the terms of the Covenant she was entitled to rank as an original member, although her actual entry was postponed by reason of her refusal to sign the Treaty of Versailles. Her membership must therefore be regarded as anomalous."

It has taken considerable courage to stand out almost alone in a fight against the injustices of a League, where representatives of Chinese bandit-chiefs and war-lords sit at the same council table with the delegates of self-governing democracies and by their vote help to make or unmake the laws that free peoples are expected to obey. Since those days at the Paris Peace Conference when China refused to sign the Versailles Treaty and dispatched her paid emissaries to Washington to "break the treaty in the Senate," it has been the opinion of this commentator that she deserved no consideration from the League that was created as a part of that treaty.

China sneaked into the inner circle through the back door of St. Germain and has since on all occasions demanded full equality with the victors and the right to a seat on the permanent Council of the League. The succession of unpardonable blunders whereby China earned this quasi-right, goes back to her forced entrance into the World War in 1917, pushed, prodded and threatened by an American diplomat into severing relations with Germany, under pledges that his Government would finance her war requirements and defend her case against Japan at the Peace Conference. One brilliant American diplomat, confided to the writer that "it would take twenty-five years of hard, up-hill diplomacy to undo the mistakes of Reinsch." He realized, as did the writer, that a semi-civilized, chaotic, Pagan State held together by the terms of an impractical treaty and the recognition of the Powers, and whose people "love liberty as they love a foreign cocotte" would, in time, impose its own penalties on those who admitted this artificially created nondescript of the Washington Conference into the community of nations.

A Changing Viewpoint

Gradually these truths are breaking through the wall of propaganda and overcoming the tremendous educational campaign of the internationalists, League enthusiasts and others interested in

preserving the *status quo* as something sacred and inviolate. Thinking men throughout the world are beginning to express thoughts that three years ago would have incurred the penalty of social ostracism and charges of disloyalty. In *The Case for Manchoukuo* this writer clearly stated his views concerning the unfitness of China to be recognized as a sovereign state and admitted to membership in a League of Free Nations. There is now before us a new book by that fearless British critic, Douglas Jerrold, entitled *They That Take the Sword*, in which he directs attention to the causes of the present world unrest and the failure of the League.

He emphasizes in his opening chapter, the fundamental truth that civilization as we understand it, is Western European civilization, based on Christianity, individual liberty, democracy and love of peace. Out of these principles the Law of Nations has been evolved and the League of Nations conceived and erected to give effect to them. The full applicability of International Law to any other states, as Sir Thomas Erskine Howard states in his *Lectures on International Law* :—

"is not to be presumed but to be proved several of these states such as China, Persia and Siam. . . . can hardly be said not to have been admitted into at least the outer courts of the charmed circle. But this lends no authority to the view that the whole system is applicable, without scrutiny of the facts to the relations between European and Oriental Powers. Von Holtzendorff points out that one does not find in the prodigiously varied organization of the Mohammedan States of Europe, or of those belonging to the Extreme East, that community of traditions, that mutual understanding, which even in Europe took thousands of years to produce the germ of International Law. He protests against the premature extension to all people of the forms of the Law of Nations, and of the principle of international equality. J. S. Mill wrote to the same effect."

Mr. Douglas Jerrold takes up the same thesis and traces step by step, the break down of the order. In connection with China, his analysis bears out in every particular what this publication has been saying for many years.

"The first fruits of the new experiment were seen in Washington in 1922, when, in the first flush of the liberal revival, Chinese propagandists pictured to the world the dawn of a new era of enlightened progress for the Chinese people. The spokesmen of China at that Conference were the representatives of the Western-educated official classes. Their case was supported by the missionary and cultural organizations who saw in these eloquent and idealistic gentlemen the final and finished product of the marriage of East and West after half a century of missionary effort on which the American people above all had lavished so much money and such tireless enthusiasm. . . . The energy and ability displayed by the agents and publicists of the Kuomintang certainly showed that some transatlantic arts, at least, had been profitably studied. They put across a glowing picture of a purely imaginary Chinese republic progressing towards orderly constitutional government by virtue of liberal ideas. In the name of democracy they made eloquent appeals to the Western world, inviting its moral and material support for an imposing program of wholly visionary reforms. Thus was created the atmosphere in which the Conference eventually pledged itself to 'render such aid to China as may help her to secure real independence.' Not a voice was raised to suggest that any effort should be made by the great powers to stem the tide of anarchy in China. No delegate drew attention to the pitiful plight of the Chinese people after ten years of misrule and devastation. Instead, the powers agreed to provide the Chinese politicians with the 'fullest and most unembarrassed opportunity' for continuing their misrule for an indefinite period. China, in fact, in the since-fashionable phrase, was in a state of political evolution. The obvious agents of change were the Westernized Chinese politicians. Evolution is, on the liberal hypothesis, always 'up and up' and 'on and on,' and the simple task of statesmanship is to co-operate with all the factors of change as they emerge and to ignore the results as temporary manifestations of the age of transition". . . .

Nothing is so corrupting to the mind as false principles. The world's shocking pretence for thirteen years that a government exists in China, and that country is evolving slowly but

surely a liberal, humane and just government, sprang from the necessity imposed ineluctably on Western liberalism of co-operating with the organizers of change everywhere out of their belief that in a world of men naturally wise and virtuous change makes for progress. The present rulers of China have shown, in fact, an unexampled rapacity and a degree of cynicism unusual even in Chinese politicians. . . .

It is obvious that there have existed under the forms of absolutism governments as bad, if not as contemptibly weak as that of China to-day. The government of Abyssinia may well be a case in point. What has been appalling in its consequences was the necessity imposed on the League of Nations, and therefore upon all its member states, of accepting the liberal and idealistic protestations of Chinese statesmen at Geneva at their face value, thus bringing not only the new international order but humanitarian ideals alike into public contempt. A kiss can betray as easily as a sword. The courtesies interchanged at Geneva have betrayed the ideals of decent people all over the world. . . .

When we proclaimed the spread of liberal institutions as our goal and made elaborate gestures of friendship towards the Chinese bandit governments and the Russian dictators. . . . it became clear to the world that we had lost faith in our principles and were occupied solely in saving the face of "advanced" politicians. The people may be enslaved, but Parliament must be preserved, millions may die of starvation, be massacred or sold into slavery so long as the League remains. Altars may be desecrated, priests, ministers, missionaries and nuns may be murdered and robbed, but so long as the murderers come to Geneva to make up a quorum, all is well. . . . The Chinese contrast (to Lenin's philosophy) proves that on no other terms but slavery can the appetite of men for power be reconciled in a world governed only by human volition, with the needs of social order. . . .

In the name of Christian civilization, we plead for the legalized immunity of banditry, corruption or oppression in China, and, in the name of religious toleration and political freedom, welcome the greatest persecuting state in Europe to the world's council at Geneva, where, under the presidency of a statesman whose pagan colleagues have broken the most sacred laws of God, we pass pseudo-moral judgments on a nation which has dubiously infringed an article of the Treaty of Versailles. . . .

For not only did the member states (of the League) pledge themselves without qualification to respect the frontiers of their fellow members, however freely flowed the blood on the farther side, however vile the corruption which was practiced, but they agreed in advance that in any dispute, failing an unanimous decision, the League is to stand aside. . . .

The apologists of the League have sought to dignify with the name of morality an international system which tolerates murder, persecution and slavery: they have mobilized the sentiment of the world only against those who under whatever provocation transgress the terms of political agreements made between politicians however long or happily defunct: so doing, they have possibly dulled the world's conscience beyond repair. . . . The rights of plain men have no franchise at Geneva. The only crimes recognized are breaches of political agreements made by politicians among themselves. The law of God and the laws of Nature are alike unknown to the jurists of the League. No better instances can be given than the cases of China, Japan, Germany and Italy. China is guilty of no default from her international obligations by allowing bandit rule and the oppression of force over half a continent, Japan, putting an end to these abuses in the only area open to her effective intervention, is condemned.

In effect, Mr. Jerrold states his case, only more effectively, more convincingly and more brilliantly, along the same line of argument set forth in an editorial entitled "Probing the Issues," in the December number of this magazine, in which we said:

As long as the League embraces within its membership nations and peoples having no capacity for self-rule, who do not know the meaning of the word "liberty," who have never fought for their rights, who have no conception and no qualification to exercise the right of government, peoples oppressed by dictators, war-lords, bandit-chiefs, slave-holders, madmen,

gangsters and grafters, "Jackals of the Victory," Clemenceau called them, the enforcement of its mandates becomes a mockery, a betrayal of the high ethical and legal ideas upon which this association of free peoples was conceived and brought into being by a great humanitarian and lover of liberty. Under the present composition of the League, it becomes not an instrument for safeguarding the liberties and welfare of mankind, but as Leon Bourgeois foresaw in 1919, a combination of Great Powers who would seek peace rather than a peace founded on justice. And that seemingly is what the League has degenerated into, a mechanism to preserve peace at any price as long as the *status quo* remains unchanged. . . . There can be no change, no justice, no peace or hope of peace until the present League is dissolved and reorganized on an entirely new basis.

In his last chapter on the Future of the League, Mr. Jerrold arrives at the same conclusion. The same thought finds expression in the writings of many of the highest authorities on International Law, that a common morality and a common civilization is the only foundation on which an enduring Society of Free Nations can be erected. Or, as Mr. Jerrold puts it,

"the only League of Nations which can preserve human liberties is a League built on the foundation of human liberty. Politicians can argue and dictators can act as they like but they cannot alter this one certain fact in a world of uncertainties." . . . "One conclusion," he says, "at least emerges from these considerations. If the League is to be revitalized in the cause of peace, its membership must be limited to nations subscribing to a common morality, and its range of action must be limited to those matters to which the common morality applies."

Only One Way

And that, if it means anything at all, and, whether we like it or not, means a League with war-lord despotisms like China on the outside. There is only one way to start all over again, that will command the sympathy and support of the vast majority of thoughtful Americans and that is to recognize the realities of the world situation, admit the right of oppressed peoples to break away from their bondage and then in a joint note of the Great Powers addressed to the Chinese war-lords, notify them that they will be given a stipulated time in which to compound their differences and unite under some form of government that will bring to an end the slaughter of defenseless peoples and enable the Government to discharge faithfully its international obligations. If, at the expiration of this term of grace, China is still disunited, the Powers will then proceed to recognize each entity or faction as an independent state. To countenance the wilful massacre of millions more of these helpless peoples to uphold the ideals of Geneva and give effect to a treaty which transformed the fiction into a reality and endowed it with an International Personality, constitutes a crime against God, against Humanity and against Civilization.

Who killed the League? It was not Japan, nor was it Italy or Germany. The League invited its betrayal when it let down the bars and opened its back door to admit such blood-stained despotisms as Soviet Russia, Ethiopia and China to full membership. The worst enemy of the League has been its particular pet, War-Lord China, who refusing to negotiate directly with Japan over a purely adjustable local incident, ran hysterically to Geneva, demanded immediate protection, lined up the smaller nations in a vote for the condemnation of Japan as the "aggressor" and insisted upon the application of sanctions that would have plunged the whole world into a war in which she would have contributed nothing but talk.

Under the Nanking dictatorship China is progressing slowly towards the goal of the Kuomintang. Province after province is being "unified" and brought under its sway. A constitution drafted to perpetuate the supreme power of a military "president" is being prepared for submission to the hand-picked delegates of a minority party convention. Progress is being made along many material lines. Construction of new military roads, mechanization of the army, expansion of the air force, stabilization of currency, and the establishment of war industries goes on apace. Everything is running true to form. There is no difference except in name between the political evolution of China and that which we have before our eyes in Soviet Russia. It is, and will remain, a formidable union of states held together by overwhelming military force, in which

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The Forthcoming United States-Philippines Trade Conference

By JAMES G. WINGO

THE return of the two trade experts, Frank A. Waring and Ben David Dorfman, sent to the Philippines by the United States Government to collect, analyse and evaluate data on Philippine-American trade, helps to focus attention on the forthcoming joint trade conference, provided for in the Philippine Independence Act.

The two youthful senior economic analysts of the United States Tariff Commission were chosen by the Interdepartmental Committee on the Philippines last summer to go to Manila to gather facts and confer with Philippine Government officials as a preliminary to the United States-Philippines trade conference. The experts, who spent five months in the Philippines, were aided by J. Bartlett Richards, American Trade Commissioner in Manila.

Waring and Dorfman traveled extensively in the Philippines. They visited gold mines in the Mountain Province, the coconut country in Central Luzon, the sugar centrals in the Visayan Islands and the hemp district in Mindanao. Their study covered conditions relating to the tariff and trade policy of the United States with respect to the Philippines and in the light of changes in the political relations between the two countries.

Although the experts' conclusions have not been published, indications are that their analysis will show that termination of free trade between the United States and the Philippines would mean the ruination of Philippine sugar, coconut oil and embroidery industries, the curtailment of the tobacco and hemp industries and the loss on the part of the United States of practically the whole Philippine market, which at present stands eighth for American goods.

Figured on a tonnage basis, the United States is taking 83 per cent (valued \$92,000,000) of the total exports of the Philippines and accounts for 65 per cent (valued \$29,000,000) of the islands' imports.

American interests in favor of a free trade relationship readily point out that the Filipino has been educated to American goods almost exclusively, that the islands constitute an American trade outpost, that Philippine products are shipped direct to the United States on American ships which carry back to the islands cargoes of American goods, that the Philippines ranks first as United States market for cotton cloth, milk, cream, galvanized iron, steel sheets and ready-mixed paint, and second in wheat flour and canned fish.

Filipinos advocating free trade say that despite the claim of American agricultural interests that Philippine products compete with theirs, the movement of goods shows a decided advantage to American agriculture in the exchange. The Philippine interests argue that sugar, coconut oil, tobacco and cordage all supplement rather than compete with, American products. They say that with the elimination of free trade with the Philippines, America must buy tropical products just the same and buy them elsewhere. In the meantime the Philippine market for American farm products would disappear entirely. In the purchase of American milk, the Philippines with its population of only 14,000,000, ranks first in the world. No country in Asia—not even China, Japan or India with their teeming millions—buys more American dairy products,

flour, cotton goods, poultry, canned and smoked meats, fish, vegetables and fruits than the Philippines.

Within a radius of 3,000 miles from Manila, more than half of the world's population lives. The greatest need of these undernourished Asiatics is milk. Free trade advocates say that the United States is using the Philippines as a trade base, the loss of which would be a big sacrifice of American food trade.

In Washington there is at present no sign of any action on the proposed conference. President Roosevelt has not officially set the date. Actually there is no need for the conference until a year before November 15, 1940, the date when export taxes on Philippine products sent to the United States go into effect. But last spring High Commissioner (then Governor General) Frank Murphy, who succeeded in extracting a promise from President Roosevelt to call the joint trade conference in 1936, thought it was best to have that conference as soon as practicable, so that the Philippines may know what to expect of the United States. Murphy has planned to be back in Washington this spring.

Philippine interests are not as eager to have the conference in 1936, when American statesmen are very busy electioneering, as to have a propitious date for it set by the President. They believe that such presidential pronunciamiento would postpone congressional action on bills prejudicial to the Philippines. The argument that everything concerning the Philippines must be held in abeyance until the conference meets could then be effectively put up.

Filipino leaders including Resident Commissioner Quintin Paredes, first envoy of the Commonwealth of the Philippines to the United States, seem to have the impression that the Roosevelt administration will ameliorate the severity of the economic provisions of the Independence Act. In urging Congress to re-enact the independence law after it was rejected by the Philippine legislature, President Roosevelt said: "Where imperfections or inequalities exist, I am confident that they can be corrected after proper hearing and in fairness to both peoples." In finally accepting the Hare-Hawes-Cutting Act, rechristened the McDuffie-Tydings Act, the Philippine Legislature gave as one of its reasons for doing so the President's statement "which gives to the Filipino people reasonable assurances of further hearing and due consideration of their views."

Waring and Dorfman were not yet with the United States Tariff Commission when it made a comprehensive study on United States-Philippines relations, published in 1931. That study, covering the whole 32-year period from January 1, 1899, to December 31, 1930, had a great influence in the shaping of Philippine legislation in the last five years.

The commission found that the balance of the commodity trade between the islands and continental United States during the 32-year period was favorable to the Philippines by about \$381,194,000. During the same period the balance of commodity trade between the Philippines and all foreign countries was unfavorable to the islands by \$126,706,000.

Molybdenum in Japan

A molybdenum vein struck at Kamo, Mitsugun, of this prefecture late last December, is expected to help Japan's munitions industry considerably, if the volume of the deposit measures up to expectations, Jiro Nakayasu, of Sannomiya-cho 1-chome, Kobe, the owner of the mine, has received a sum of money from the Commerce Office for exploiting the mineral.

The tract owned by Mr. Nakayasu has an area of 75,000 *tsubo*. The principal vein, from four to eight feet wide, extends approximately 2,000 feet across the center of the tract, while there are innumerable branch veins.

Kan-ichi Konishi, engineer of the Osaka mine superintendence bureau, who recently examined the mine, says:

"It is premature to estimate the exact size of the deposit, but the sampling to date has shown that the ore yields about three per cent of molybdenum. The fact that the Commerce Office has given a fund, however, indicates the worth of the deposit."

The molybdenum deposit is contained in silica some of which contains also gold and bismuth. The last named element is something extremely rare in Japan.

In view of the fact that molybdenum was until recently found only at Yamase-mura, Noki-gun, Shimane prefecture, the discovery of another vein in this part of the country is regarded as a stroke of good fortune.

The Automobile Industry in Japan

THE automobile industry in Japan will see some important developments in the course of the current year. After two decades of slow progress, a period, in fact, marked by a lack of initiative and low spirit of enterprise, the industry is expected to emerge from its lethargic state. The present Cabinet approved in August of last year the draft of a new Automobile Consolidation Bill for presentation to the Diet, under whose provisions the making of gas driven vehicles will be centered in factories controlled by Japanese capital. The proposed official measure was followed by negotiations between the General Motors in Japan and Nissan, the makers of the "Datsun," with a view to their merger.

Although no agreement has as yet materialized, it is clearly indicative of the trend in the automobile industry in the country. It is also significant to note that since the announcement of the official program a number of new automobile manufacturers are preparing to enter the field. These activities, however, slackened when the Imperial Diet was dissolved in January. The special session to convene in April of this year may hardly be in a position to take action on the matter, but it seems assured that no matter what political group or coalition assumes power after the special Diet session, the automobile industry, now a matter of increasing importance from the viewpoint of national defense, will receive early attention. As the shipbuilding industry of Japan grew under the benevolent influence of the Imperial Navy so the automobile industry of the country may develop under the ægis of the Imperial Army, which is bent on the modernization of its armaments.

Japan imported the first automobiles in 1902 or two years before the war with Russia. Although one or two firms subsequently began to make automobile parts, it was not until 1911 that the manufacturing of complete cars was attempted. The first attempt proved a complete failure.

When a national exposition was held in Tokyo in 1914 there were exhibited three types of automobiles produced in the country. Of the three manufacturers represented on the occasion, only one continued to operate, though to quite an unimportant extent.

Industry of Recent Growth

It was not until 1918 that the automobile industry began to make headway under the subsidizing policy of the national government. Under the law enacted that year, trucks of over one ton capacity, built to official specifications, became subsidized vehicles, the Army granting subsidies for both makers and users. The manufacturing capacity of the country was investigated and about a half a dozen manufacturers were approved and assisted to turn out cars for military service. Of this group only the Tokyo Gas and Electric Industry Company, of Tokyo, qualified, and to this day continues to supply trucks to the army. The only other company to remain in the manufacturing field was the Kaishinsha, whose products were known as under the trade name of "Dat," the progenitor of the present "Datsun" so far as the nomenclature is concerned. Neither of these organizations was important in point of output.

In the post-war period the industry began to expand when the Ishikawajima Automobile Works of Tokyo began assembling the "Wolseley" parts, and a firm known as Hakuyosha placed on the market the light "Otomo" cars. At the same time, Mitsubishi commenced to manufacture passenger cars, on experimental lines. In 1924, both "Dat" and "Wolseley" were added to the list of officially subsidized cars, other enterprises that had been active in these lines retired from the competition. Even Ishikawajima, favored by military support, discontinued the manufacturing of passenger cars, confining its activities to the production of trucks.

Fostered by the military, the manufacturing of motor trucks continued to develop though at a moderate pace. In 1928, the total annual output reached 300 cars all disposed of in the same year, indicating that some advance and stability had been attained.

In the period 1930-33, the industry began to show signs of expanding activities due, on one hand, to the industrial revival brought about by currency depreciation and, on the other, to a

livelier and more enlightened official interest. In 1929, the Department of Commerce and Industry organized a committee to report on the possibility of setting up a national automobile industry. In 1931 another committee was organized to establish the industry on its own basis. This committee, in conjunction with the Department of Railways, then contemplating the operation of motor bus services as feeders to the railways, took up the matter with the principal manufacturing concerns, and as a result it was decided to design two standard-size trucks of 1½ and 2 ton capacity and also three medium-size passenger buses as a joint undertaking, with official financial aid. The Mitsubishi Heavy Industry Company in 1932 began to manufacture these motor buses for the Railway Department.

Production Record

The production of trucks and public service cars, under such encouragement, increased, as shown in the following table from 434 in 1931 to 1,044 in 1933, more than 50 per cent in a period of three years, and further to 1,321 in 1935.

PRODUCTION OF MOTOR VEHICLES IN JAPAN

				Passenger cars	Buses and trucks	Light cars	Total
1930	..	..	..	—	458	—	458
1931	..	..	..	—	434	—	438
1932	..	..	..	2	694	144	840
1933	..	..	..	11	1,044	557	1,612
1934	..	..	..	14	1,321	1,366	2,701

The automobile industry of Japan may be said to have entered a new epoch in 1934 when the first mass-production process was put into operation at the Nissan factory in Yokohama for turning out light, small-bodied "Datsun" cars. As shown in the above table, the output of light cars increased from 557 in 1933 to 1,366 in 1934, which expansion was mostly accounted for by the output of the new Nissan plant.

Apart from all mechanical and technical matters, the production of "Datsun" cars marked the first successful commercial phase of automobile manufacturing in Japan. Their low cost of operation and upkeep is said to make them especially attractive to the Japanese for whom American and European cars are too expensive in terms of their economy. The light weight and small size of the "Datsun" are also thought more in harmony with the road and street conditions of the country. The manufacturers claim that their productive capacity had to be expanded to 1,000 per month for the end of last year to meet the growing demand for their products, and their production will have to be even further expanded in the not distant future. The above production figure compares favorably with those of the leading manufacturers of the United States. In point of output at least the Nissan Company, makers of the Datsun, ranks with Ford and General Motors in Japan, which operate assembling plants in Japan and are responsible for the preponderance of Ford and Chevrolet cars in the country since 1925.

The present Nissan organization is the development of a series of mergers, representing the history of pioneer work in the automotive industry of Japan over a period of more than twenty years. The first step in the same direction was taken in 1925 when the Kaishinsha makers of "Dat" cars, of which mention has already been made, amalgamated with Jitsuyo Jidosha Seizo Kaisha Utility Motor Manufacturing Company, the makers of the "Lila" passenger cars and trucks. The new organization, now known only by the brand of "Dat," remained in operation until it was merged with the automotive section of Tobata Foundry Company, known since last year as Kokusan Kogyo Kabushiki Kaisha (Domestic Industry Company). The new "Dat" manufacturing company, upon its later amalgamation with the Ishikawajima Motor Company, again changed its name to Jidosha Kogyo (Motor Industry) Company. About this time Herr Gorham, a German engineer,

whose earlier attempt to produce miniature cars had proved commercially unsuccessful, was placed in charge of the new manufacturing plant. The matter of manufacturing light vehicles was taken up and in 1934 the new Nissan Company was brought into existence with a capital stock of ten million yen with a capacity of something less than 1,000 units per month, which was expanded before the close of 1935 to a rated capacity of 20,000 yearly.

Complete Equipment

From the technical point of view, the new Nissan plant merits attention, as the first automobile factory in Japan to be equipped with facilities to produce motor-cars direct from the raw materials. The complete manufacturing process is carried out by machinery. The works, situated at Shinkoyasu, Yokohama, in the neighborhood of the Ford plant, covers about three times this area, with a further 35 acres adjoining the present site and along the waterfront, reserved for future extensions. Plant facilities include die-sinking, tool and die construction, forging, heat treating, welding machine, sheet metal and body designing and assembling sections, as well as a research department, making the establishment a complete self-contained unit. The number of officers and employees, foreign engineers and factory operatives employed by the company now totals nearly 2,000.

The present Datsun car is powered with an engine of 722 cubic centimeters and fifteen brake horse-power. The passenger car is capable of a speed of fifty miles per hour with a fuel consumption of one gallon of gasoline. Estimating the price of gasoline, in the country at fifty sen per gallon, the cost of the fuel is one sen per mile, and the total running expense including lubricating oil, wear and tear of tires, taxation, etc., is calculated to be not more than 2.3 sen per mile.

The present list of Datsun products consists of three models of passenger cars, namely, four-passenger Sedan, four-passenger Phaeton and Roadster, and two types of trucks and a light van.

The establishment of the Nissan Company in 1934 marked important changes in the foreign trade situation of Japan. Although the country had been exporting automobile parts and accessories for a number of years to the annual value of approximately four million yen, the building and sale of complete cars had been confined strictly to the domestic market. The year 1934, saw the first exports of automobiles, the Nissan Company being responsible for the bulk of these overseas operations. The number of cars exported for the same year were 349, with a value of Y.613,405, China, Manchoukou and other countries in Eastern Asia being the principal markets. Exports of cars up to the end of November, 1935, according to the reports of the Finance Ministry, reached a total of 539, valued at Y.1,229,098.

A factor of far-reaching significance is unquestionably the contemplated official program to "consolidate" the industry. According to this plan, licenses for manufacturing automobiles will be granted only to a juridical enterprise founded by a Japanese subject or in accordance with the law of Japan. The most important feature of the proposed law is that such juridical enterprise must be controlled by Japanese capital. It is further provided that makers, when approved by the authorities, are to be exempt from the business profit tax, internal tax, and prefectural taxes for a certain period of time. They are also to be exempted from import duties on machinery required for automobile manufacturing.

Merger in Prospect

In view of this announced program it was not surprising that it should be followed by negotiations between the General Motors (is capitalized at \$8,000,000 and with Japan Ford, which practically controls the national market) and Nissan, for an amalgamation of interests. The negotiations were later suspended because of changed domestic political conditions, but will be resumed when the situation is cleared. Under the proposed co-operation plan, it is reported that Nissan will own 51 per cent and General Motors 49 per cent of the 160,000 shares of the new organization.

It is also more than likely that upon enactment of the contemplated legislation a number of new manufacturers will enter the field. Among those who are at present engaged in production of automobiles in the country the following may be mentioned besides Nissan:—

Gas and Electric Industry, to which reference has been made as makers of trucks for the Imperial Army since 1918; Kawasaki

Sharyo Kabushiki Kaisha (in operation since 1931); Mitsubishi Heavy Industry, in operation since 1932; Kyosan Seisakujo, which started production in the same year; Kosoku Kikan Kogyo (High Speed Mechanical Industry), formerly known as Ota Jidosha Seisakujo and producing since 1931. The latest to enter the field was Toyoda Automatic Loom Works.

The reorganization of Ota Jidosha in the summer of last year as the High Speed Mechanical Industry Company was a development of considerable importance. The Mitsui interests hold considerable stock in the new organization which is expected to produce light cars in competition with the Datsun of which Mitsubishi holds the exclusive export agency. The machines for manufacturing cars are being supplied by Mitsui which will have the sole sales agency for the new organization.

The Toyoda Automatic Loom Works, of Nagoya, whose fame as manufacturers of textile machinery is world-wide, has announced the creation of a new automobile model passenger car to be known by the trade name of "Kiso" after the Kiso Mountains in the same part of the country. The new coach is the first of the many models which Toyoda intends to design and build without subsidy from the government.

Under the stimulus of the official Automobile Industry Encouragement Bill, there are a number of organizations seriously taking up the making of high speed Diesel engines. The Mitsubishi Shipbuilding Works of Kobe, which now forms part of the Mitsubishi Heavy Industry Company, was the first to produce high speed Diesel engines for automobile use. The "Fuso" trucks manufactured at the same factory are equipped with this engine, which burning cheap heavy oil, are said to consume half the amount of gasoline required for ordinary gasoline engines.

In 1931, the Ikegai Iron Works of Tokyo began to manufacture high speed Diesel engines which have been adopted for a number of trucks and public passenger vehicles, with encouraging results. The trucks equipped with a special fuel chamber designed in 1934, are claimed to have operated in Tokyo more than 10 months with a total mileage of 16,000 kilometers without a single breakdown. In view of the high cost of fuel in Japan and the urgent requirements for national defense, Diesels are expected to replace gasoline engines to an increasing extent.

Reservoirs in Ceylon

The foundations have just been laid for a vast network of tanks and reservoirs which will, when the whole scheme is completed, endow Ceylon with one of the most efficient irrigation systems in the world.

This ambitious project was conceived some time ago by the Ministry of Agriculture, and it is now learned that the Surveyor-General's Department have just completed a magnificent undertaking, involving a detailed survey of the catchment areas of all the main rivers of Ceylon.

A fine colored map, prepared by the department, shows at a glance the watersheds as well as the catchment areas of the main rivers, so that new reservoirs and tanks and schemes for immediately restoring existing tanks to their pristine efficiency can be planned out at any time.

This survey of the catchment areas is also valuable from other points of view, namely:—

- (1) The catchment areas themselves can be protected against any development which may prejudice their efficiency as such;
- (2) Soil erosion in those areas can be prevented;
- (3) Flood protection schemes to drain off and preserve surplus water in flood-time can be devised;
- (4) Reservoirs and water-supply schemes can be constructed to serve neighboring districts;
- (5) A regular system of irrigation for all cultivable areas can be set up; and
- (6) Last but not least, by means of public works of these descriptions, the menace of widespread and periodic droughts can be effectively combated.

In fact, what will happen when all these plans are carried out in course of time is that the valuable sources of water supply in this country which now go to waste in annual floods will be conserved for the good of the community.

Japan's Automobile Industry Bill

THE "Motor-car Industry Law" as explained by the *Japan Times* in a résumé of the important legislation to be voted on during the present session of the Japanese Diet aims at self-sufficiency in the supply of the cheap and popular motor-cars, and encouraging and protecting Japanese motor manufacturers. At the same time it includes provisions permitting foreign motor-car manufacturers to continue operations in this country, though they would be placed under certain restrictions preventing them from increasing or expanding their production facilities beyond the limit of those facilities at a specified time last summer.

Two essential reasons are offered for supporting the Government scheme. The first is the element of opportunity to act now toward stopping importation of foreign motor-cars in order to give a solid foundation to the domestic industry and taking advantage of the present low yen exchange rates. The second and more important reason is based on considerations of national defense. Experience acquired by Japan during the Manchurian incident demonstrated that a large supply of popular type motor-cars is essential at a time of emergency. This point is further strengthened by the progress of mechanization of the Army, which has been attained with amazing rapidity.

With these two strong reasons in mind, the Government is attempting to enact the law in spite of the delicate and intricate international relations which the scheme involves.

In October, 1935, the number of motor-cars in Japan reached 135,000, of which about 110,000, or 16 motor-cars for each 10,000 inhabitants, were in Japan Proper. These figures are rather insignificant when compared with the total of 23,800,000, or 1,895 per 10,000 inhabitants, in the United States. Moreover, it must be pointed out that 96 per cent of all the motor-cars in Japan are manufactured by the General Motors Company and the Ford Motor Company.

The use of motor-cars throughout the country has caused a rapid development in the manufacture of automobile parts and accessories. The industry is still rather limited, but, it is evident that it is about to be perfected from the technical standpoint. Prevailing conditions in this particular line of industries offer grounds for belief in the success of the Government authorities' program for self-sufficiency in popular motor-cars.

Along with the wider use of motor-cars and the growth of the manufacture of automobile parts and accessories, a national motor-car industry policy has gradually been formulated.

The essential features of the draft of the Motor-car Industry Law, approved by the Government late last month are as follows:

1. Purpose of the Law.

To establish firmly the motor-car manufacturing industry in Japan, with a view to attaining completion of national defense and industrial development.

2. License System.

(a) A license is required for any person who assembles motor-cars which are designated by order of the Government and who manufactures automobile parts which are designated by order of the Government, in excess of a certain limit that may be fixed by the Government.

(b) Such a person who receives a license from the Government is required to be a joint stock company formed under laws of Japan, and a half or more of the total stock shares and voting rights in the company must be in the possession of Japanese subjects or companies organized under laws of Japan.

3. Privileges.

(a) Companies to which licenses have been granted shall be exempted from certain classes of taxes for a certain period.

(b) Special provisions will be made in the Commercial Codes so that conveniences may be extended to automobile manufacturing companies with respect to increasing their capital and floating debentures.

4. Protection of Public Interests.

(a) The Government shall be authorized to issue orders to the automobile manufacturing companies whenever it deems such action necessary for the supervision of the industry and for the promotion of the public welfare.

(b) The Government shall be authorized to issue any orders which are deemed necessary for the national defense.

5. Regulations Governing Importation of Automobiles and Parts.

(a) When prices of imported automobiles and parts are considered so low as to have a harmful effect on the growth of the automobile manufacturing industry in this country, the Government may restrict the importation of, and impose higher import duties on, automobiles and parts thereof.

6. The Automobile Manufacturing Industry Commission.

The Automobile Manufacturing Industry Commission shall be organized to consider matters relating to licenses for automobile manufacturing companies and the enforcement of the law.

7. Retroactive Provision.

Those persons who started the automobile manufacturing business as specified in this law, prior to August 9, 1935, and who may be still engaged in the same business at the time of the enforcement of this law, shall be permitted to continue such business without licenses, but only within the limit of their business prior to August 9, 1935.

Who Killed the League?

(Continued from page 208)

the will and wishes of the people will never be permitted to find free expression. That much must be conceded and, with the precedent of Soviet Russia, it should be sufficient to place China not only in the League and on its Council but entitle her to the distinction of presiding permanently over its sessions. If mere numbers and force is to be the deciding factor in world politics, then the time is not far distant when War-Lord China will sway the destinies of Mankind from the Palace on the shores of Lake Geneva that looks down on that "Wall of Remembrance" which perpetuates in enduring stone the tenets of Western Civilization and morality.

Essential Conditions

But, somehow, we hold to a different conception of such a League. Until a federated China, united under a constitution emanating from the people, is evolved and arrives at that stage of self-government based on the ideals of Western morality, until her delegates can take their seats at a Conference Table of Free Peoples on a plane of equality with representatives of other self-governing states, until China with her immense armies can make some pretence of defending single-handed her frontiers and can contribute not only her annual dues but her full share in any system of collective security her admission into any new or reformed Society of Nations in which she can continue to play one member state against the other and demand that the whole come to her aid, must inevitably lead to its early collapse.

Certainly, after her experience of the past few years, Japan will never again invite a repetition of the humiliation her membership in the old League exposed her to. By its inordinate ambition to set itself up as the super-state, by admitting to full membership every undesirable, incompetent, and corrupt personality whose crimes against Humanity it was automatically committed to defend and condone to maintain its own prestige, the old League betrayed the hopes of Mankind. The world is now thrown back on a system of alliances and regional understandings as its only safeguard for future security. There seems to be no other way out of the impasse. If the League is to be reorganized on a European basis, if a Pan-American Confederation in which the interests of one state becomes the concern of two continents, is evolved in the near future, it follows that the same law must be extended to Eastern Asia. Willy-nilly, China must then recognize the leadership of Japan and co-operate with her for the protection and advancement of their common civilization and interests. By pressing to the limit her claims on the League for protection against Japan, China has handed herself over to the very fate she hoped to escape. Whether or not that fate is to be a happier one will depend largely upon herself and the way she accepts the situation.

MASS PRODUCTION IN JAPAN

The Rise of the Nissan Jidosha Kaisha, Ltd.

By SOJI YAMAMOTO, *Managing-Director*

THE introduction of the Datsun light motor-car two years ago into the world market through the establishment of the Nissan Jidosha Kaisha, Ltd., marks a new era in the automobile manufacturing industry of Japan. It may be said without hesitation or exaggeration that the effort made by the Nissan Company is the first direct step towards mass production of motor-cars in this country and as such is being watched with the keenest interest.

Coming at the time when the entire nation was eagerly looking forward to the establishment of the automobile industry at home, the work of Nissan Jidosha Kaisha is being specially welcomed by the Government, the Army, and industrial and commercial quarters where motor-cars are in the greatest demand. With further development of the company in the near future when it will be in a position to supply the major requirements of the country, the automobile industry may lay claim to having reached a stage comparable to those in America, England, Germany and other advanced motor manufacturing nations.

Aside from the mere standpoint of supply and demand of motor-cars here, the production of automobiles at home will have a far-reaching effect on the country's international balance of trade, not to mention its influence on national security, for the country need not be dependent on foreign manufacture. With annual imports of motor-cars numbering 20,000 to 30,000 cars during the past few years, a saving of approximately thirty million yen will be effected in the country's international trade balance. This is one of the largest import items for Japan at the present time and shows indications of a further increase unless manufacture at home is brought to a stage where it will be able to supply a large part of this increasing demand.

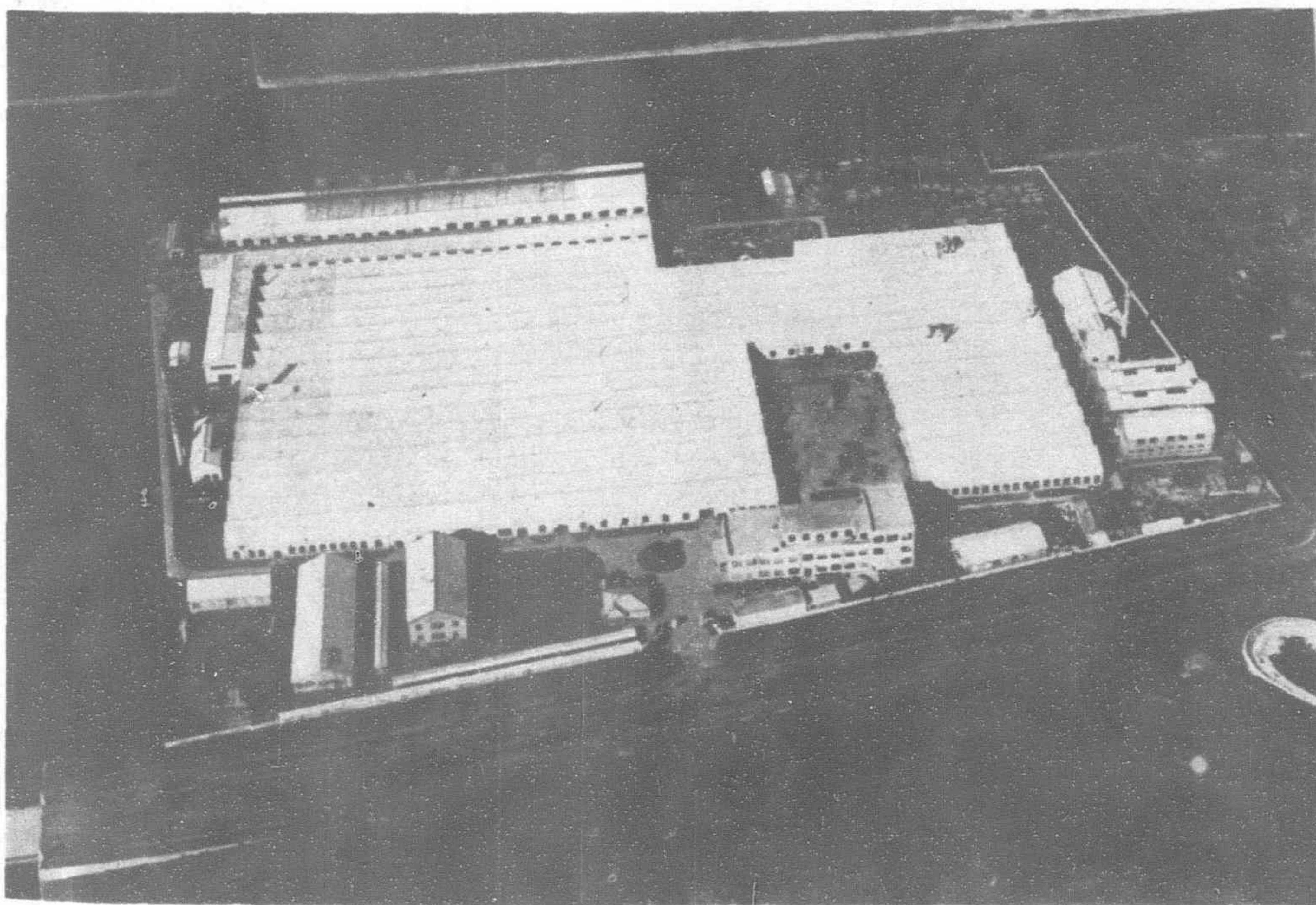
While imports have shown a tremendous yearly increase during the past few years, the total number of cars registered here is still



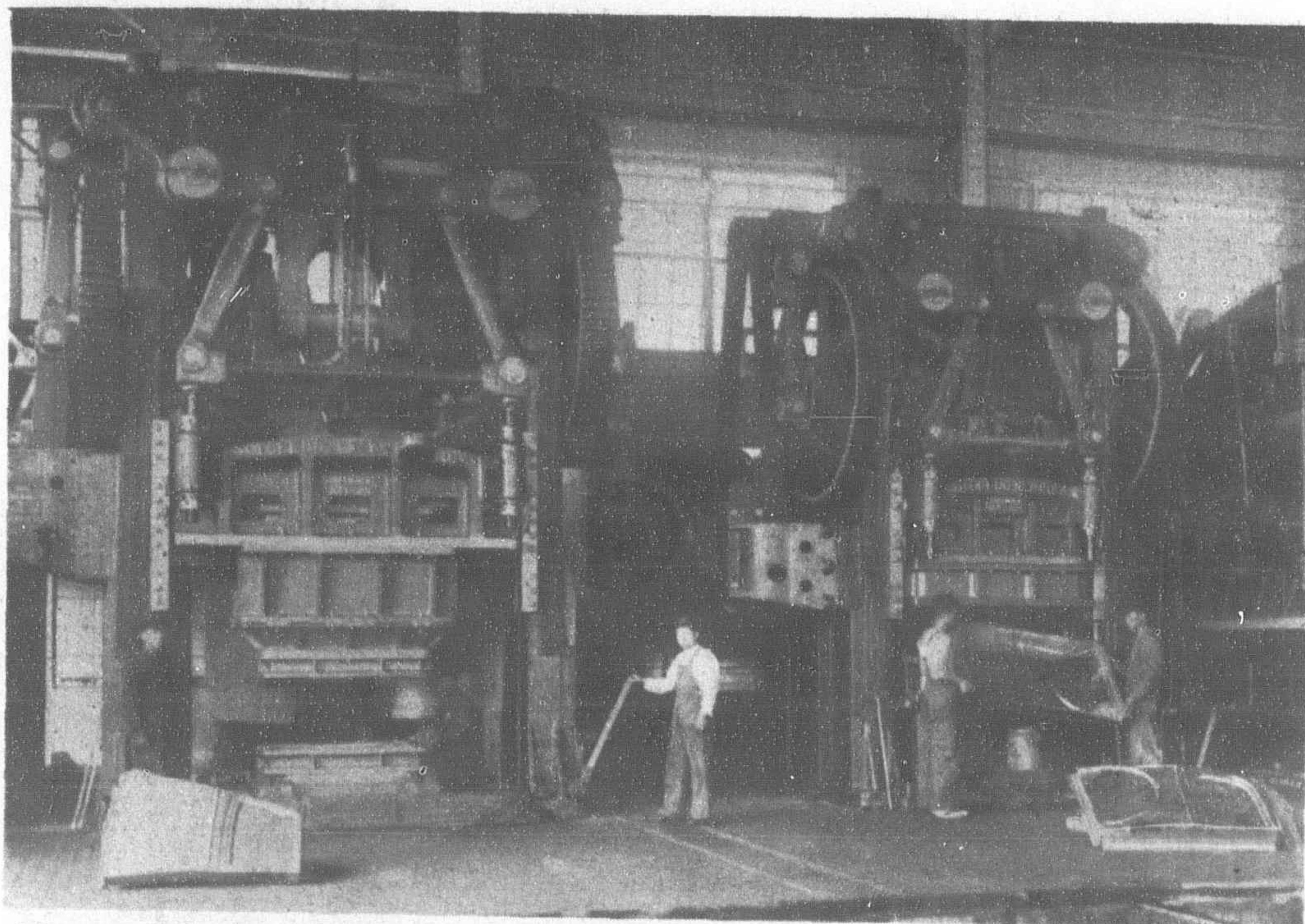
Mr. Yoshisuke Aikawa, President of the Nippon Industrial Company, Ltd., the largest industrial holding company in Japan, is also President of the Nissan Jidosha Kaisha, Ltd. Mr. Aikawa is one of the greatest industrial leaders of modern Japan

comparatively small in comparison with the United States, England, Germany and other countries where motor-cars have been manufactured on a large scale basis for many years. Figures for January 1, 1936, show 134,859 cars for Japan as compared with 26,167,107 for the United States, 1,990,650 for Great Britain, 2,182,138 for France and 1,104,000 for Germany. Based on a per capita average, Japan is far down the list, being twentieth, with one car to every 550 persons whereas in the United States which rank first, the average is one to every five persons. Even Belgium with 162,450 cars or an average of one to every 50 persons and Holland with 143,920 cars or an average of one to every 58 persons are far in advance of Japan in this respect. Mexico stands above this country with an average of 164 persons while Soviet Russia which has shown remarkable advance in the past year is next with 654 persons to a car. Thus, from the above it can be readily seen that Japan is still far from the saturation point in motor-cars, although the increasing ratio has been greatly speeded up in the past few years. The 1935 increase is estimated at 11,000 cars which means that from 30,000 to 35,000 new cars were sold last year, figuring replacements based on an average of four to five years.

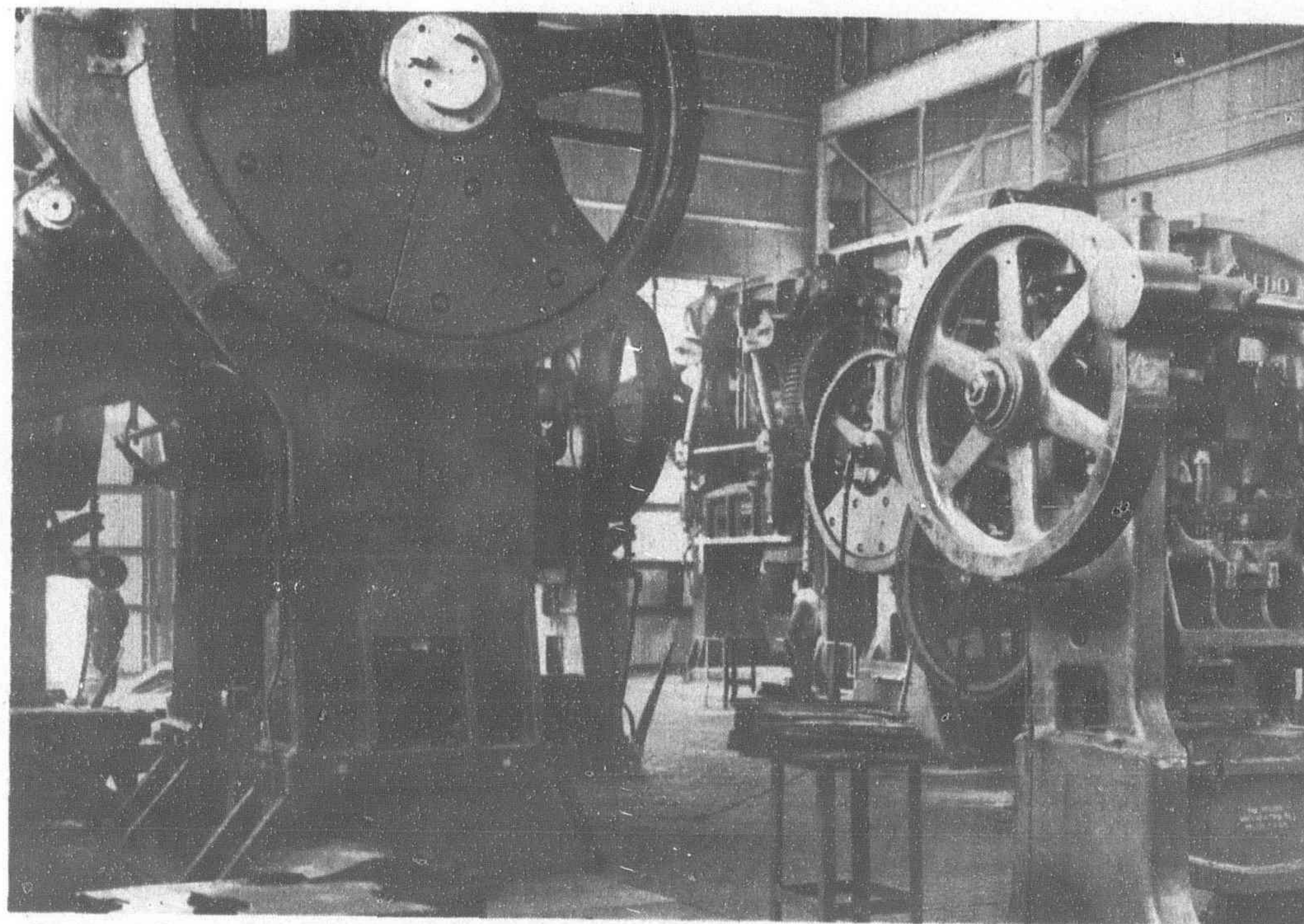
Even with this prospective market on hand, the reason a home automobile industry did not develop was due to the pressure of foreign competition. Japanese companies did not have the necessary financial backing nor engineering experience nor adequate facilities for mass production of automobiles which would permit profitable business. Consequently, with the exception of few Army and commercial trucks and buses, the control of the automobile market here was left entirely in the hands of foreign companies such as Ford and General Motors



Bird's eye view of Nissan Jidosha Plant, acclaimed the only factory of its kind in the Orient, the Nissan Jidosha Kaisha Plant at Shin Koyasu, Yokohama, is an outstanding example of industrial Japan. Buildings cover more than 13,000 *tsubo*. In the lower right is shown part of the special test track



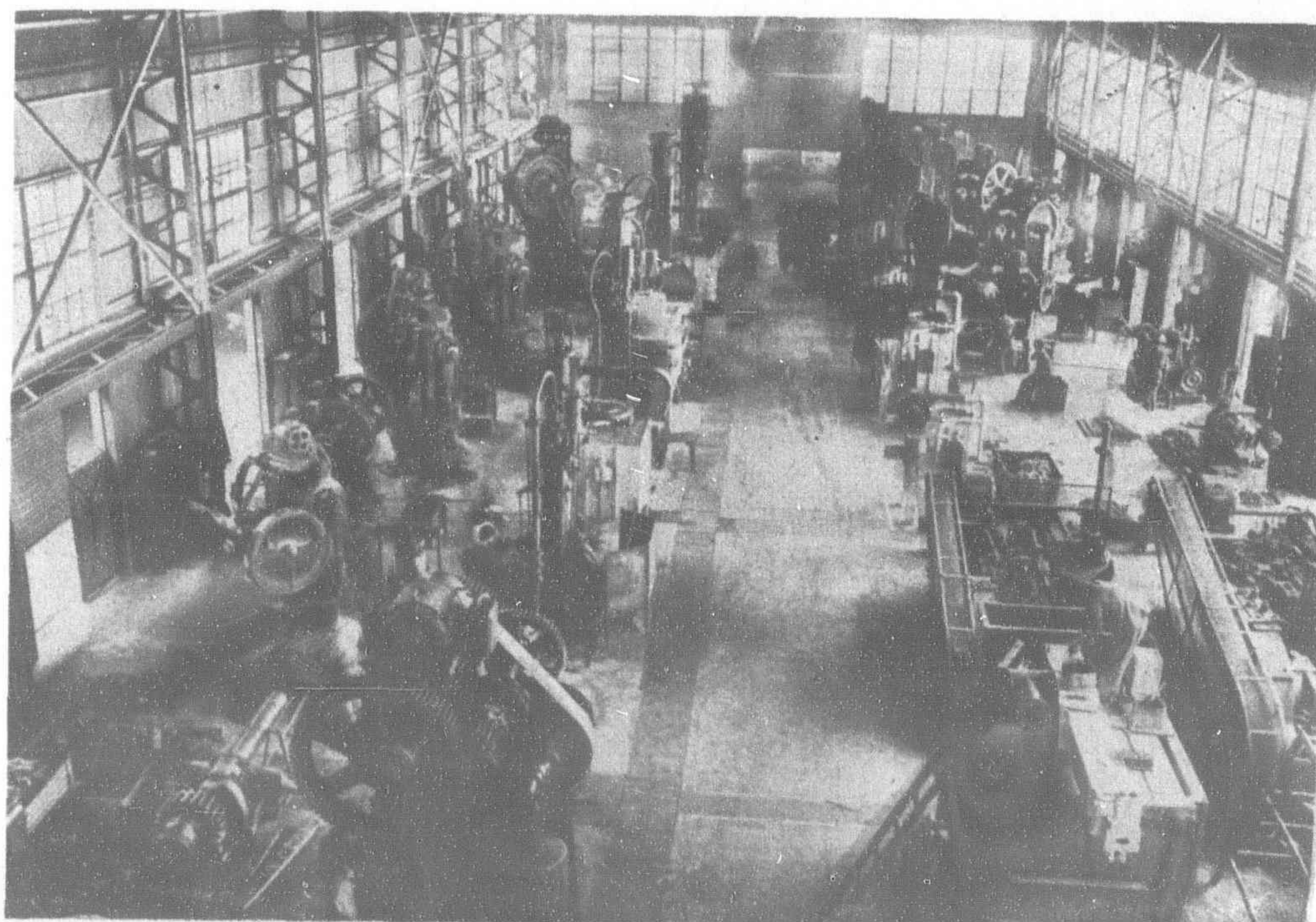
Mammoth Presses for Stampings—All stampings required in the Nissan Jidosha Plant are made in this modern shop where are installed many huge presses like those shown above



Largest Stamping Shop in the Orient—The press shop of the Nissan Jidosha Kaisha, Ltd., contains more than fifty presses, ranging in size from 25 tons to 1,500 tons



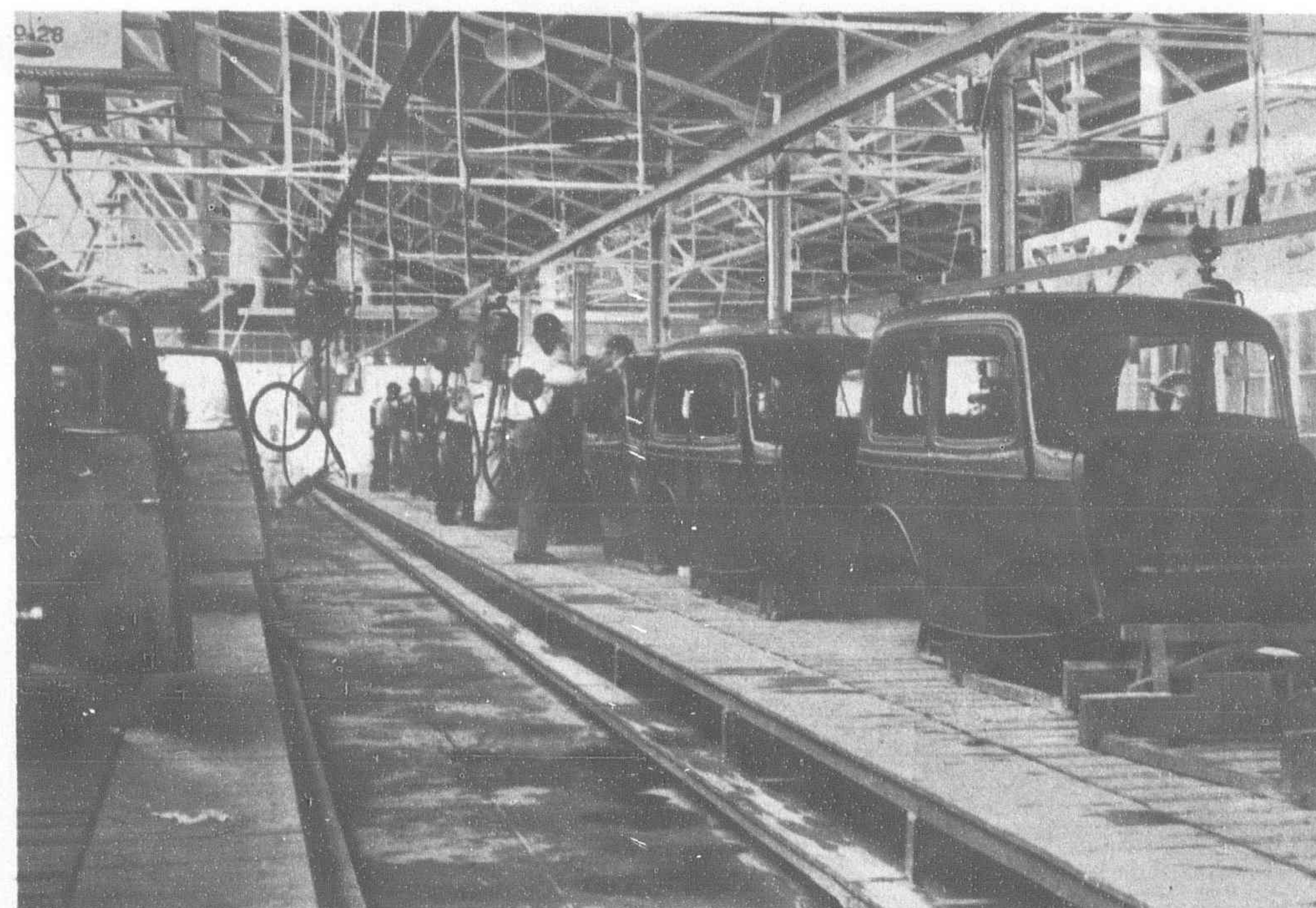
Ideal Machine Shop—Here in this spacious and modern machine shop parts are machined by the latest automobile manufacturing practice in America and Europe



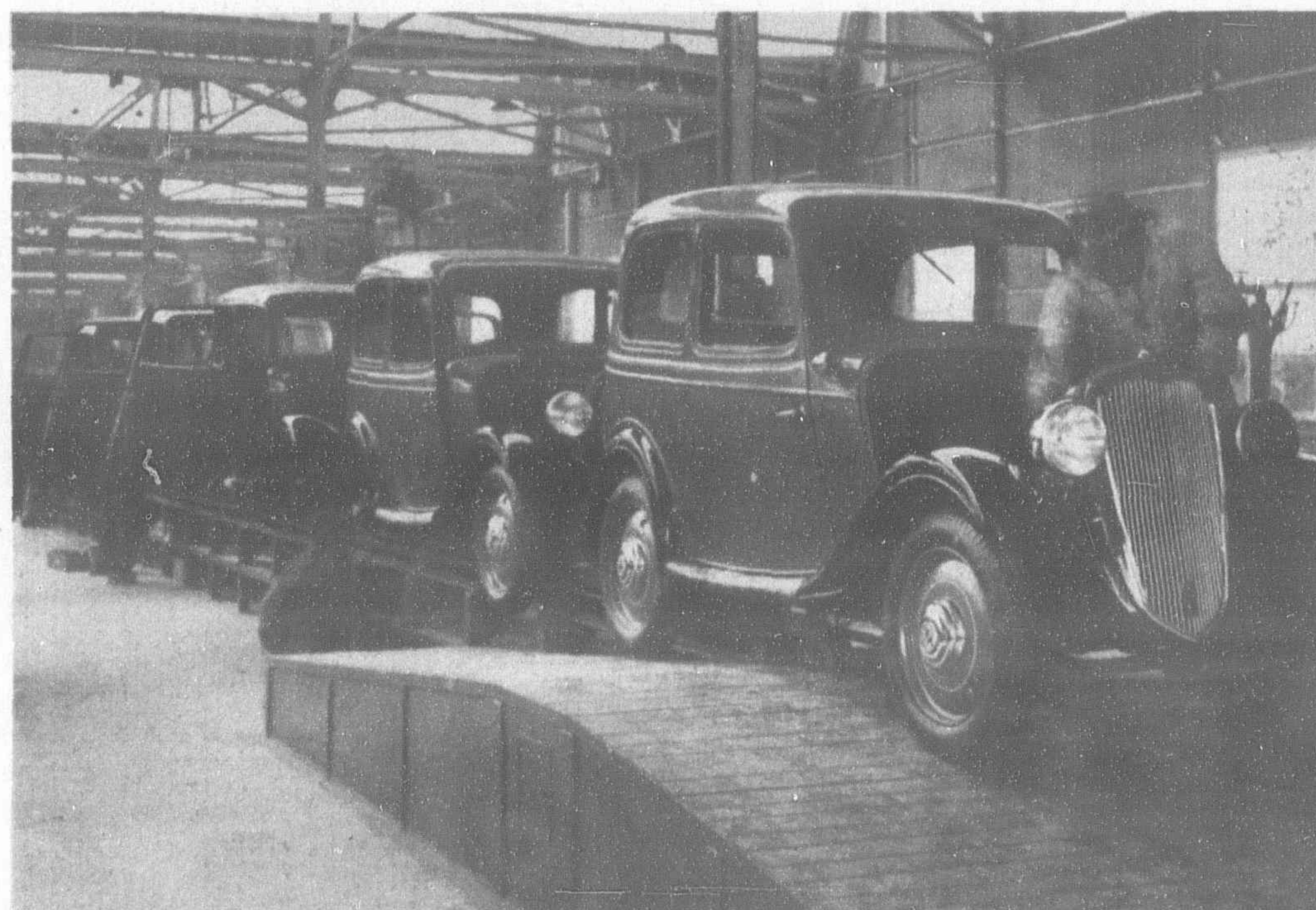
Largest Forging Shop in Japan—Forgings of the highest quality are made in this most modern forge Shop with maximum efficiency



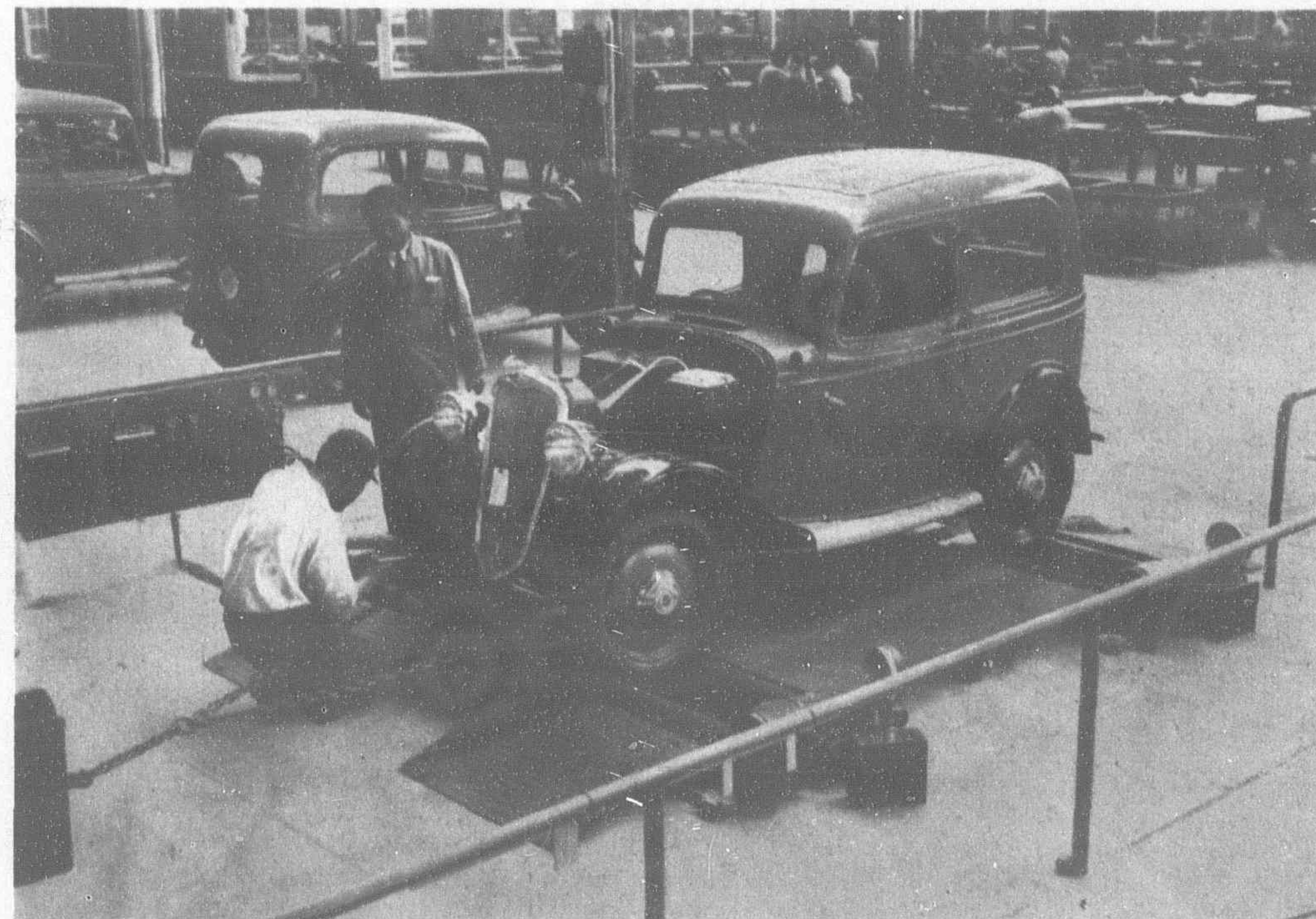
Cars Taking Shape—This shows the assembly line on the left and miscellaneous side assembly such as motor, axles, etc., on the right



Bodies in the making—The above shows a part of the body shop where bodies are made, painted and finished according to the latest motor manufacturing practice



Putting on Final Touches—As soon as bodies are mounted on chassis, the assembled car is run off the line under its own power. This shows a Datsun about to leave the line



For Safe Brake Action—As soon as finished cars are run off the assembly line under their own power they are immediately taken to the mechanical brake tester for proper adjustment

which were able to market their cars here at a great advantage and profit due to favorable factory development at home.

Faced with these tremendous odds but sensing the need of a home automobile industry, the Nissan Jidosha Kaisha embarked on its present program by establishing the first mass production factory in this country at Shin-Koyasu, Yokohama, in December, 1933. With production of the Datsun light motor-car, the company has already advanced several steps nearer its goal of achievement which is to supply the nation's entire requirements for motor-cars, both small and large, trucks and passengers. As the next step, the manufacture of larger cars is expected to be started next year.

With the approval by the Cabinet in August last of the draft of the new Automobile Industry Control Law which is assured of passage at the coming Diet, motor-car manufacturers will be greatly benefitted. Thus, the part which Nissan Jidosha Kaisha will play from now on will have an even greater bearing on the future development of the automobile manufacturing industry than it has done in the past.

In starting on the first mass production factory, the Nissan Jidosha secured the rights for the manufacture of the Datsunlight motor-car by taking over the entire Automotive Division of the Tobatta Foundry Company (now Kokusan Kogyo K.K.) and increasing the capital outlay to Y.10,000,000. The selection of the light motor-car as the initial step in the Nissan



Mr. Soji Yamamoto, Managing-Director of the Nissan Jidosha Kaisha, Ltd., is a personal associate of Mr. Aikawa from the early Tobatta days when Mr. Aikawa was just starting out on his industrial career

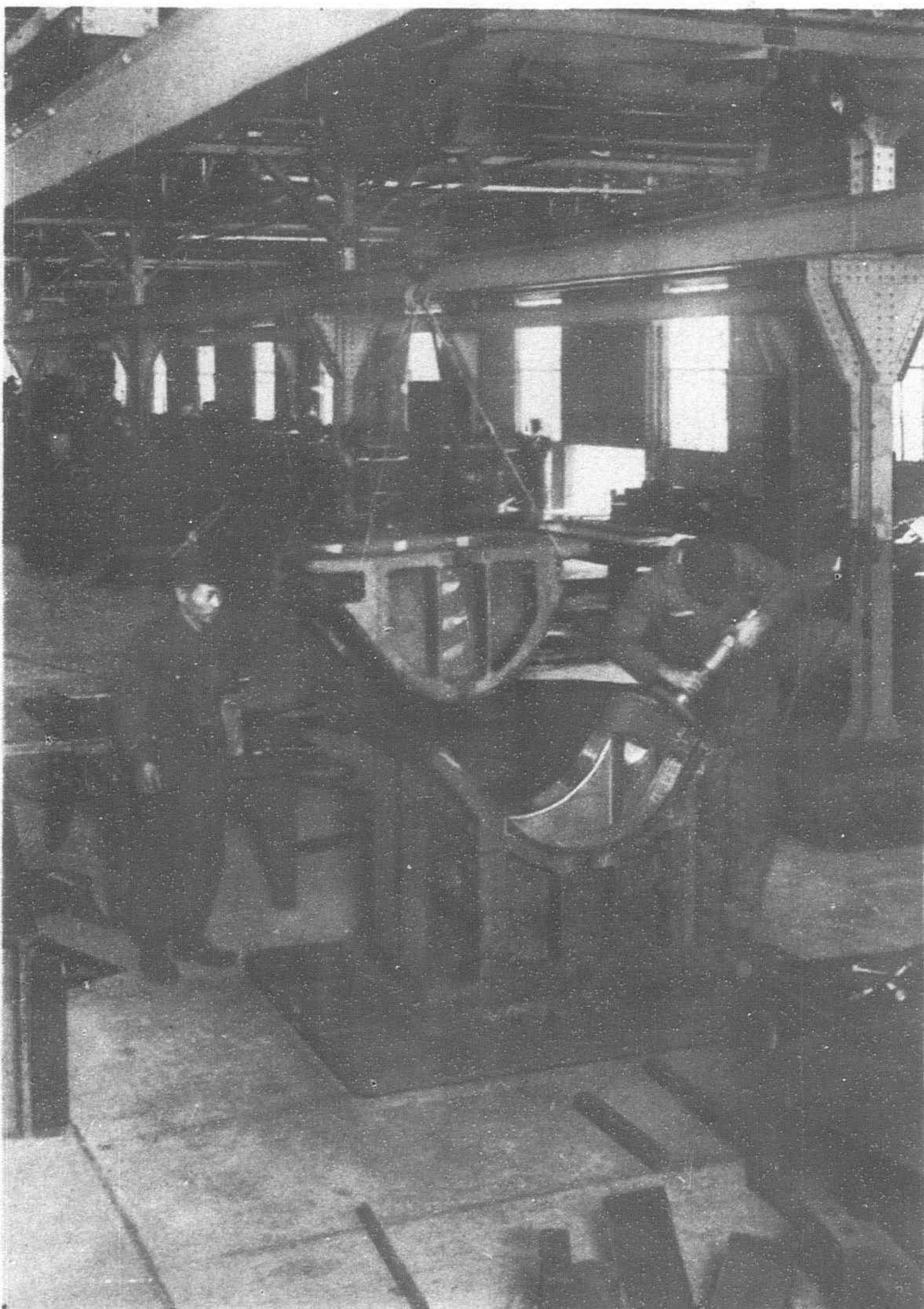
program was done only after very careful consideration of the following factors:

FIRST—With the market comparatively limited in scope and size, it would be very difficult for this company with its present equipment for producing 20,000 to 30,000 cars per year, to compete on even terms with American companies capable of turning out more than one million cars per year.

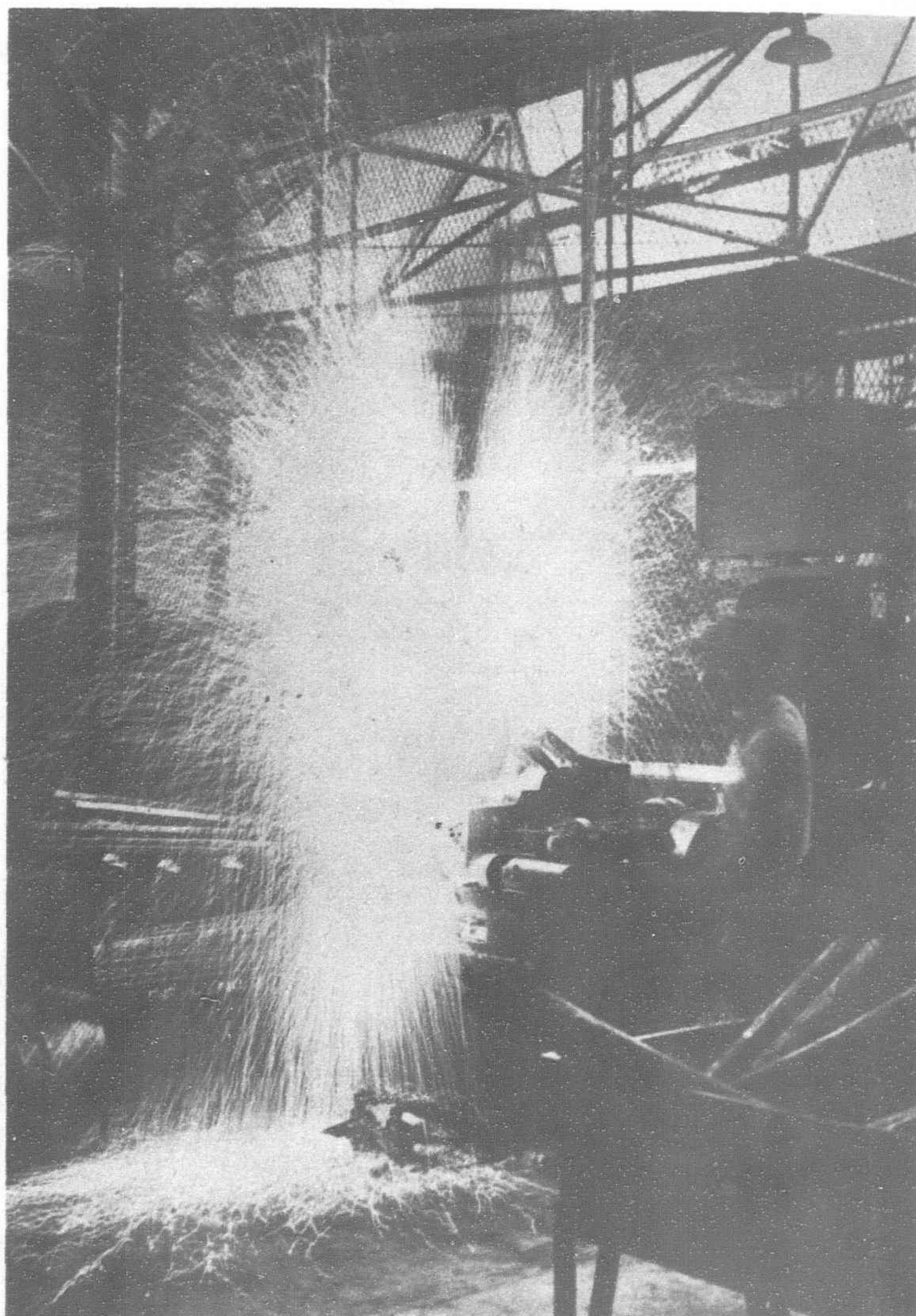
SECOND—Although the vast majority of cars registered here at the present time are those imported, it cannot be said that they are entirely suited to conditions in this country. American made cars, for example, are designed to meet American physical standards which are much more severe than the Japanese, not to mention the tremendous difference in the relative wealth of the two countries and superior roads and greater distances to be travelled in the United States. Besides, in this country where 90 per cent of the gasoline is imported, the question of fuel economy must also be given very serious consideration. In this respect, the Datsun has shown a tremendous superiority, for it can be operated at less than two-fifths of the cost of the standard car. Furthermore, road conditions are such that

for a light car, more than 50 per cent of the roads are available for travel while for a large car only 13.7 per cent are passable, based on statistics for Tokyo City.

In addition to the above, the following advantages of a light car in this country cannot be overlooked in the final consideration



Making Body Dies—This photograph shows workmen of the tool and die making department putting on the final touches to fender dies before delivery to the press shop for regular production use



Speeding Up Welding Work—Latest type welding apparatus cut down welding costs to a minimum and aid mass production

of the right kind of automobile for the first Nissan venture, namely:

FIRST—Persons above sixteen years of age will be granted a licence without the necessity of taking a driver's examination.

SECOND—No necessity for garage as stipulated in motor-car regulations.

THIRD—Extremely low tax.

That the choice of the Datsun light car has been justified is borne out by the fact that both passenger and truck cars have been widely used here. More than 7,000 cars have been completed to date since the first car was assembled in the new Yokohama plant in April of last year. This is nearly twice the total of all cars produced at home from the very beginning. The production at home starting with 1929 follows:

1929	437			
1930	458			
1931	434			
1932	840	(including	144 light cars)	
1933	1,612	(	577	" ")
1934	2,701	(	1,366	" ")

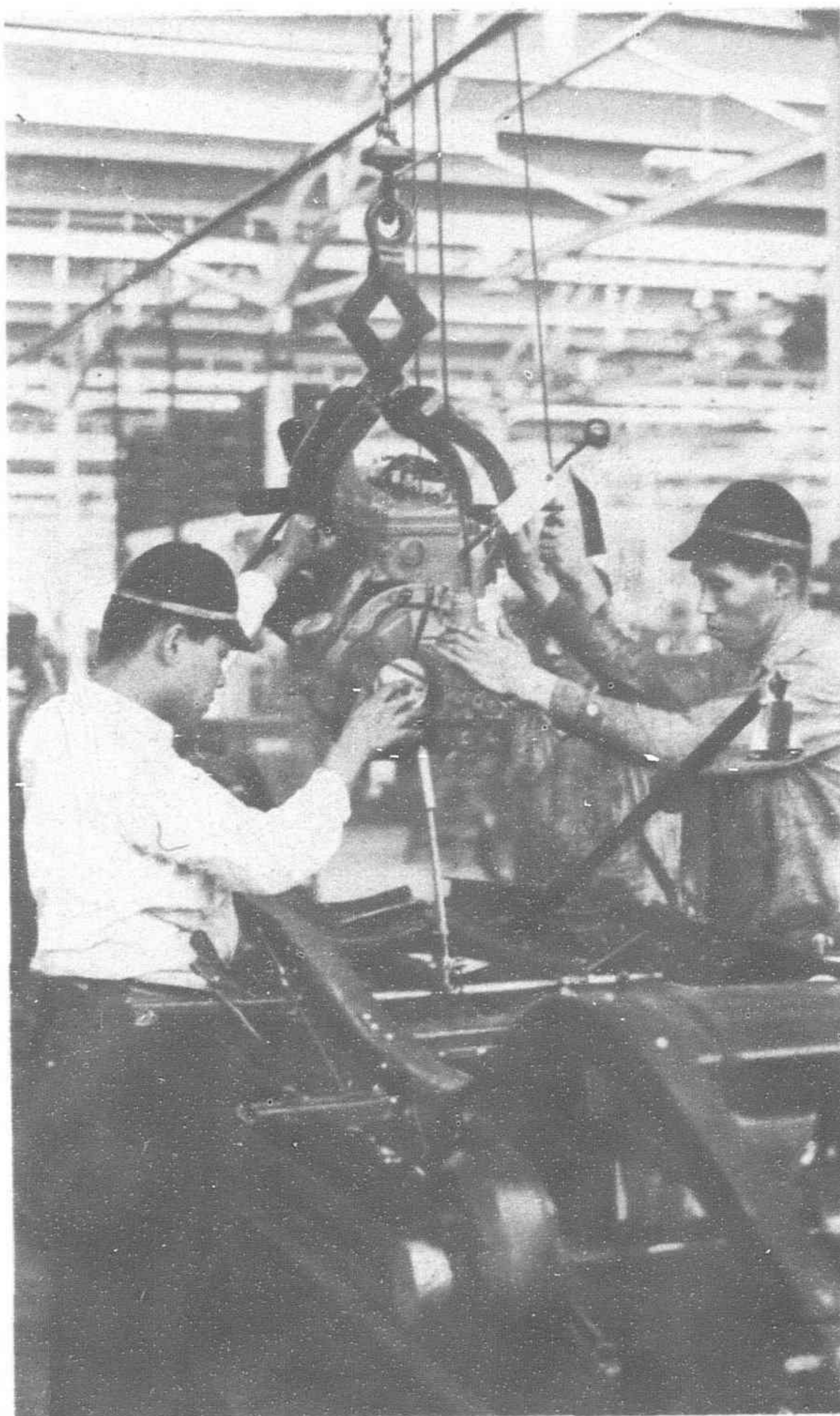
Figures for 1935 show an overwhelming increase in the number of Datsun light cars, with indications of a further increase through its adoption here as taxis and development of overseas markets.

The success attained by the Nissan Jidosha, however, has not been borne without much difficulty and hardship, for even in the selection of the site for the factory and in the selection of the machinery and equipment, the greatest care and effort had to be directed in making the proper choice. Happily, in this respect, the company is guided by Mr. Yoshisuke Aikawa, President of the Nippon Industrial Company, Ltd., the largest industrial holding company in this country and who is also acclaimed as the greatest industrialist of modern Japan.

Under his daring but far-sighted policy, it was first decided to form a Y.10,000,000 company, and if necessary, to increase the capital to meet the further needs of the industry. The site for the factory, as mentioned before, was chosen on the reclaimed land at Shin-Koyasu, Yokohama, covering in all more than 65,000 *tsubo* of land, of which 23,000 *tsubo* is used for the present factory buildings, with the rest reserved for future extension. Building area completed to date totals more than 13,000 *tsubo*. Convenience of both water and land transportation makes this site ideal for factory use.

In the selection of the equipment for production of the Datsun car, five American engineers, each a specialist in their respective fields, such as machine shop, drop forging, pressed steel, die and tool making, etc. were employed by the company at extremely high salaries at the outset to make recommendations and supervise its installation, and also to teach the Japanese workmen the fundamentals of the mass production system as practiced in America. If the success of the enterprise be judged by the quickness with which Japanese engineers and workmen have absorbed their technique, then the Nissan Jidosha Kaisha has done extremely well, for two years after the establishment only one foreign engineer is now with the organization.

With the present equipment, this company is capable of turning out 20,000 to 30,000 light cars annually, which is



Mounting Motor on Chassis—Experienced workmen mount the power plant on the Datsun chassis which is one of the most interesting operations in the motor-car assembly

comparable to production of 40,000 to 50,000 cars in America. This seems a rather far-fetched comparison but considering the state of automobile parts manufacture and its allied industries in this country, the work of Nissan Company is a noteworthy achievement in so short a time. Whereas most American companies of 10,000 to 50,000 capacity produce only major parts and purchase most of their auxiliary parts from reliable parts makers, in Japan such practice is impossible for there are no large scale parts manufacturers. As a consequence the Nissan Jidosha Kaisha has to produce practically all parts for assembly of the Datsun car and depend on the outside maker for very few minor requirements, and even these at the risk of frequent stoppages to the production line due to uneven delivery. Under such circumstances, the need of equipment to cover the entire car is a serious matter and requires enormous capital outlay. Thus, at the Yokohama plant are machinery and equipment for producing a complete car, the like of which are not seen in plants of similar capacity in America. Only at Ford, General Motors, Chrysler and other major companies are found equipment for machining all parts of the car.

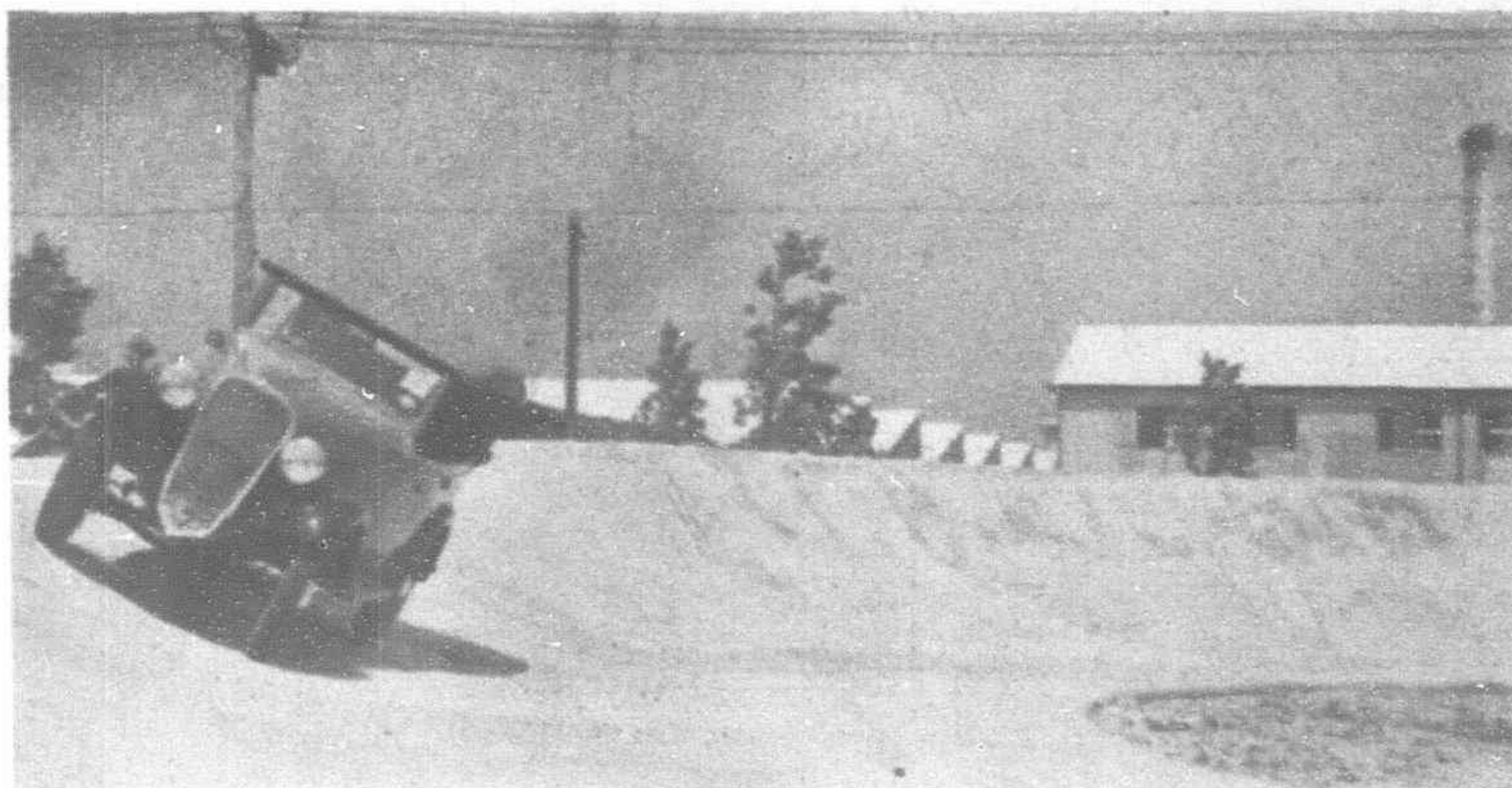
As equipped, the Nissan Jidosha Kaisha factory is composed of a machine shop, tool and die construction shop, welding shop, heat treating shop, spring and wheel making department, forge shop, press shop, assembly shop, body shop, inspection department, research laboratory, etc.

In the machine shop are installed all the latest machines and special equipment for machining all motor-car parts for mass production. The choice of the machines for the Datsun car was made as specialized as possible for large scale production, but keeping in view, its adaptability for manufacture of a large car as well.

The tool shop in which all jigs, dies, fixtures and tools used in the entire factory are made, is claimed to be the only one of its kind in this country and nothing has been overlooked to make it the most modern shop. For body dies, latest type Keller automatic machines make possible the production of most difficult and intricate dies a mere matter of form and time. For forging dies, the latest type Pratt and Whitney and Reed-Prentice die sinking machines fulfil all tooling requirements of a modern forge shop.

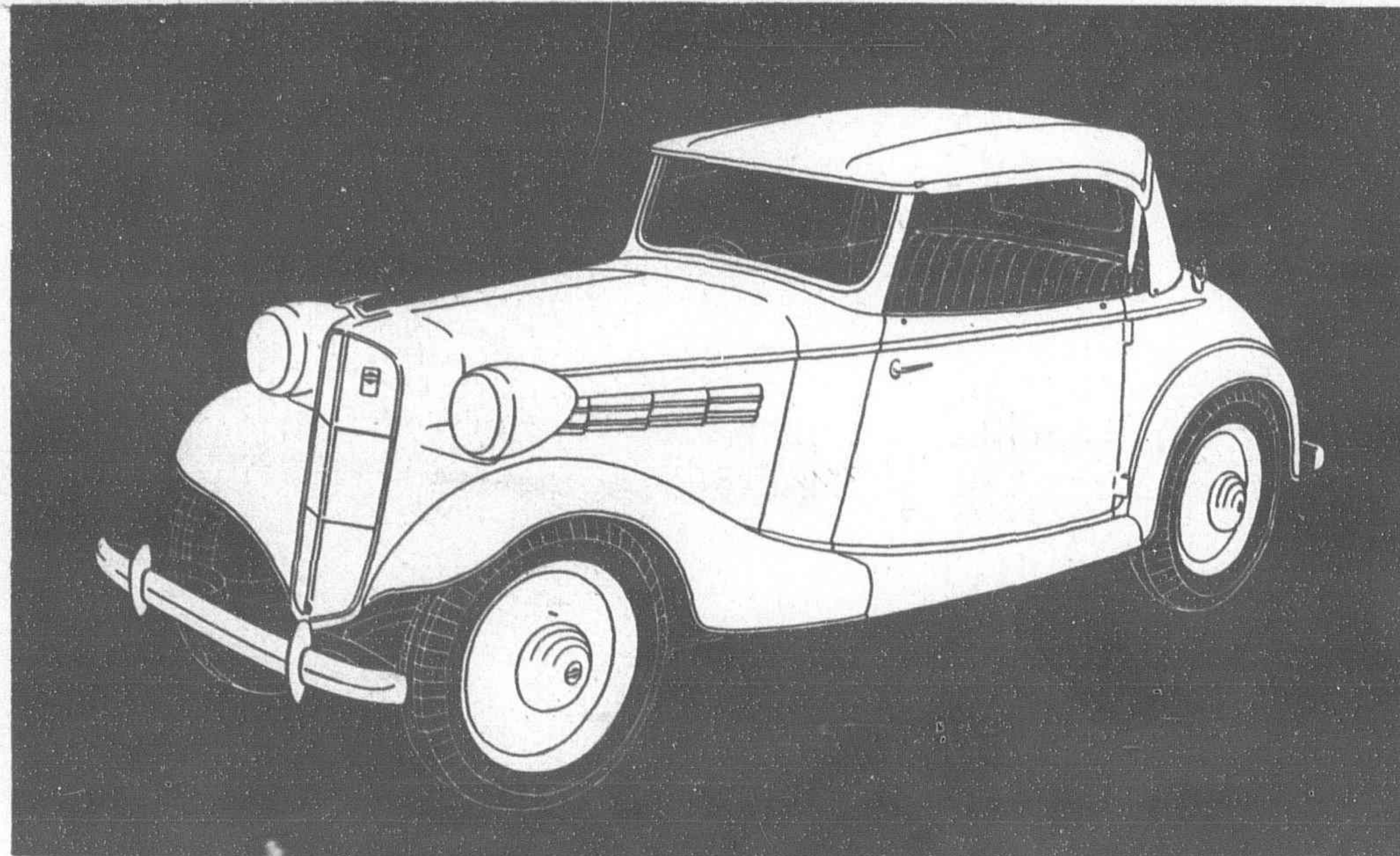
In the welding shop are installed the latest type seamless, butt and spot welding machines that cut down welding costs to a minimum. Similarly with heat treating and spring making departments, every effort has been made to bring productive efficiency to the highest level.

In the forge shop where there are installed many Erie and Chambersburg board and air hammers, all the forgings required for the Datsun are turned out at the same high degree of efficiency as any American forging company. The Japanese, because of their inheritant ability as blacksmiths and sword makers, have been extremely quick in grasping the fundamentals of the drop forging technique, and are making excellent workmen. Besides, to assure perfect uniformity in production of the finished forgings, special apparatus control

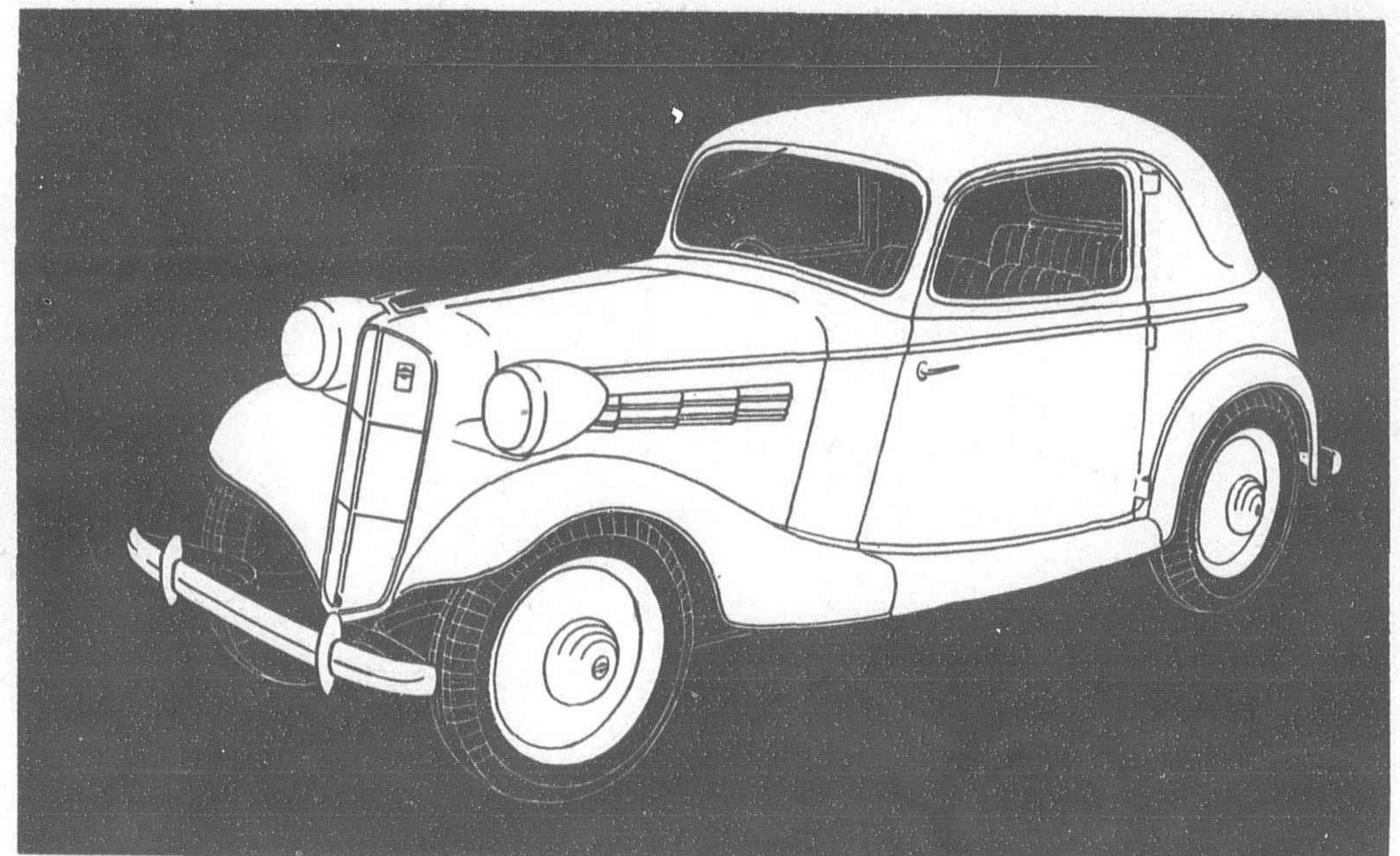


On the Test Track—Here is shown a Datsun car undergoing a regular road test on the specially constructed track

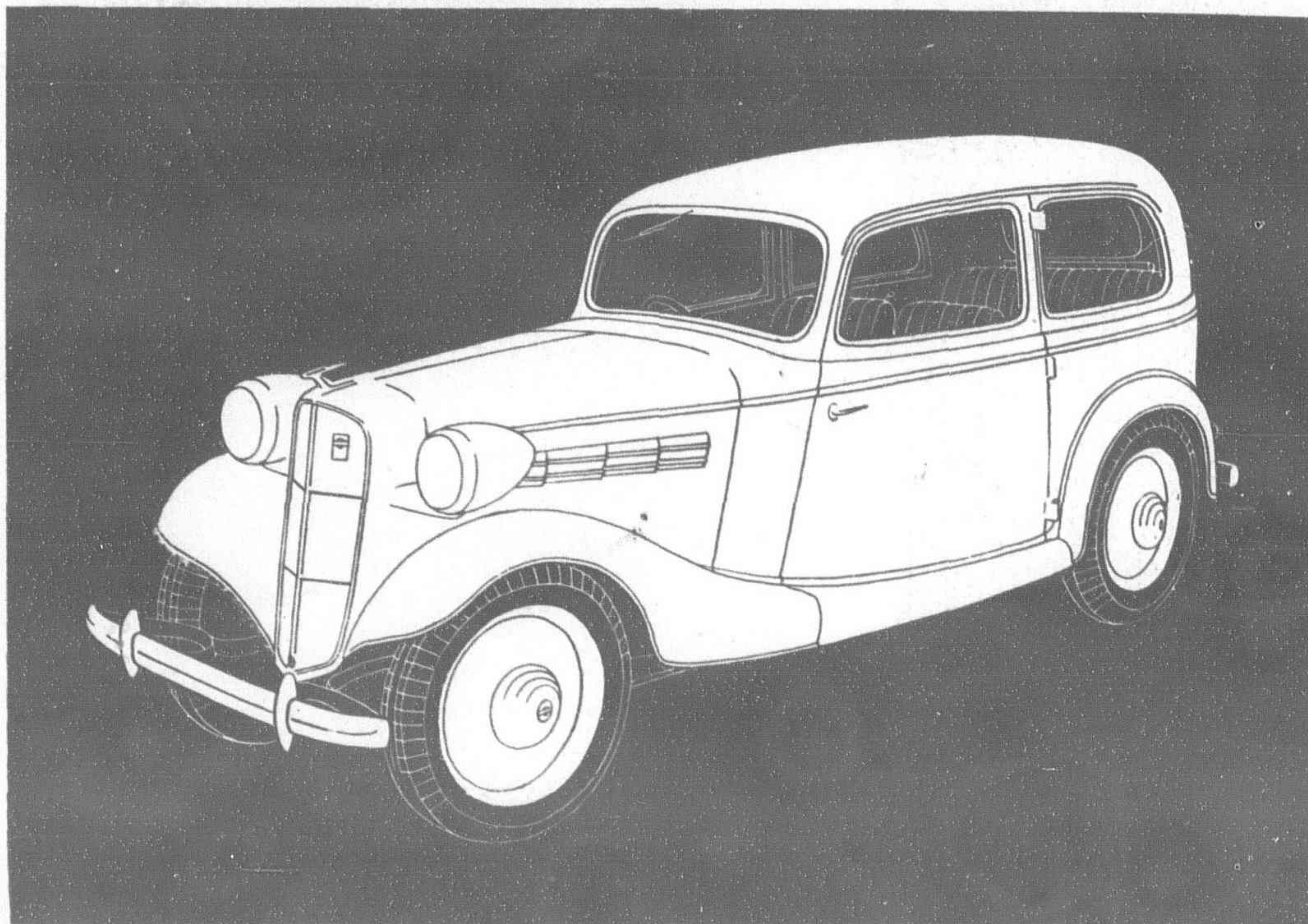
THE DATSUN 1936 MODELS



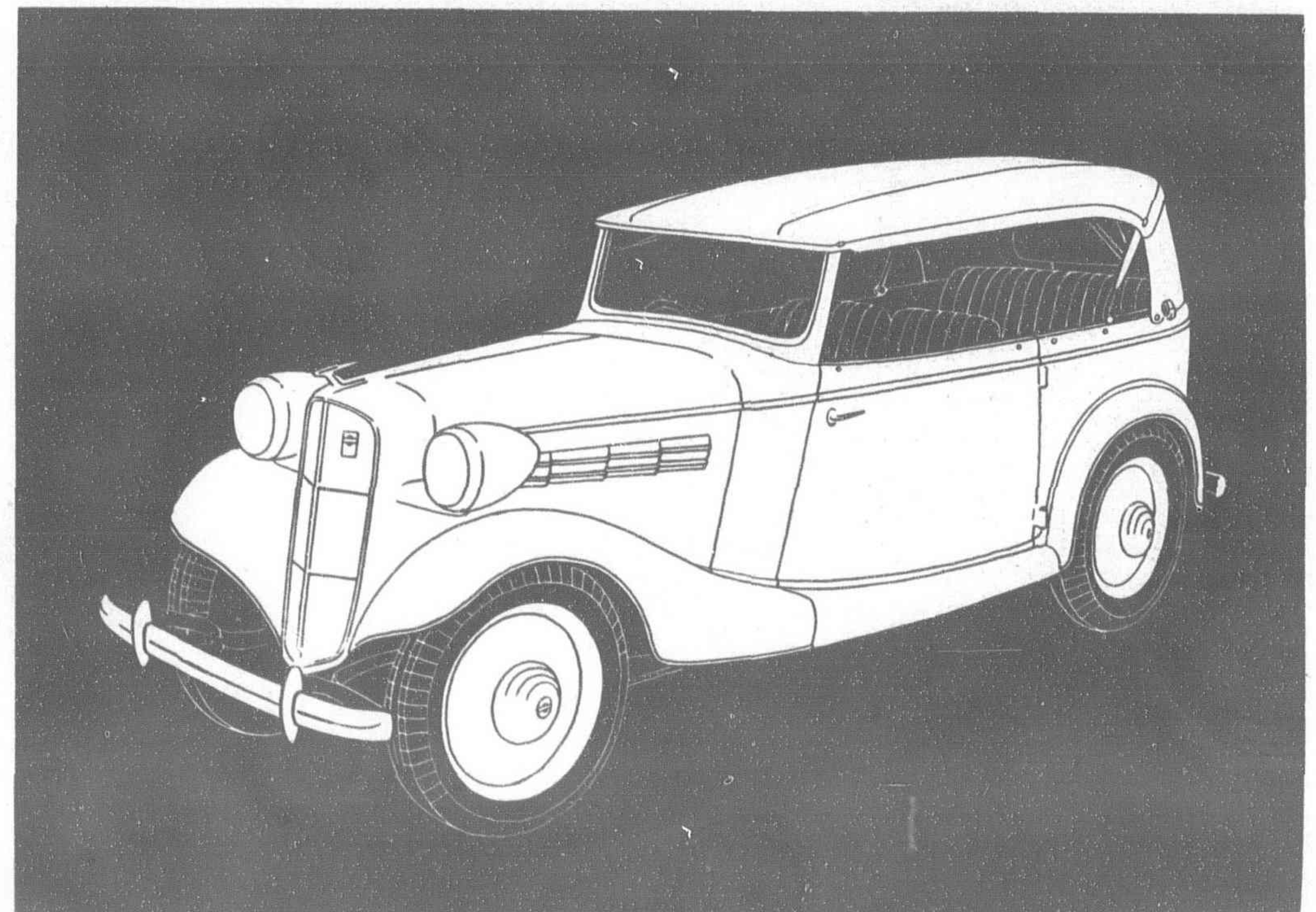
Roadster—A favorite of the young. It has two doors with an outside rumble seat and features quick acceleration



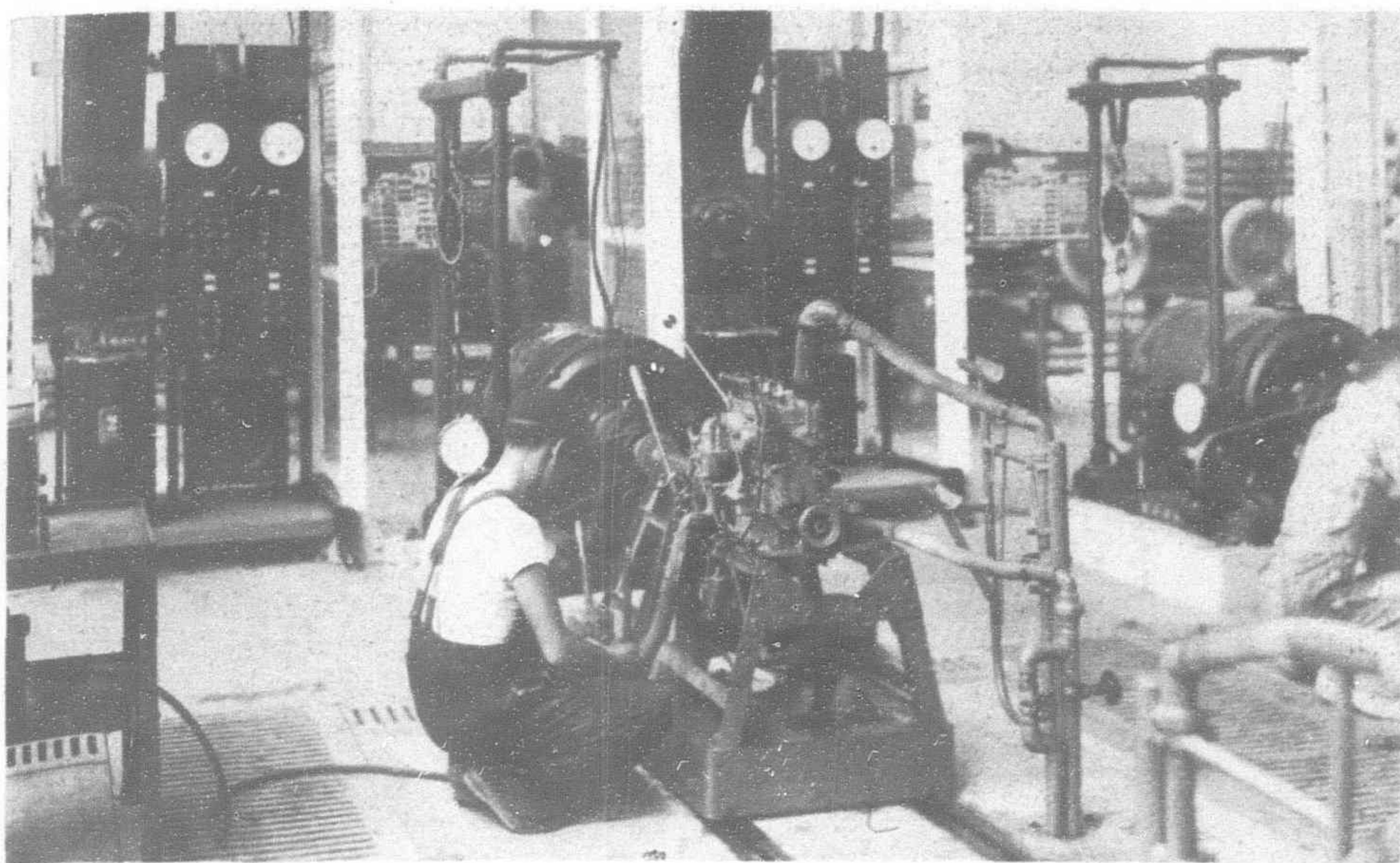
Special Coupe—A newcomer among the 1936 Datsun models is this special coupe designed for two passengers with an additional rumble seat inside the body



Sedan—So attractive is this new model 1936 sedan, both as a family and all-weather car that it is the most popular body type in use to-day. It has two doors and carries four passengers



Phaeton—The 1936 two-door, four passenger Phaeton features open driving comforts equal to large car standards at minimum costs



Testing for Power—All engines are given strict dynamometer tests for power and performance before being given approval for assembly

the temperature in the forging furnances to protect the materials from under or over-heating in the process of production.

With machines ranging from small 25 ton Ferracutes to the large double action Toledo and 1,500 ton Hamilton presses, the press shop is equipped to handle all the sheet metal stampings for small and large size cars and is the only fully equipped shop of its kind in Japan. It compares favorably with any of those found in Europe and with few exceptions to those in America.

Commensurate with the machine shop and other departments, the body shop is made sufficiently large to take care of all requirements for making Datsun bodies. Based on a system similar to that in America, bodies are assembled on the conveyor, cleaned, painted by the latest spraying method, polished, trimmed, interior fitted, and then turned over to the assembly department for mounting on the finished chassis.

The assembly or the erection department has a conveyor assembly line based on the conventional American model and can take care of all the light car requirements in this country. Newly assembled engines are given strict dynamometer tests for power, performance, etc. and are then ready for mounting on the chassis.

The completed car is run off the assembly line under its own power and is then immediately taken to the mechanical brake tester where the brakes are instantly adjusted. A regular road test over the specially constructed quarter mile track is also given each car.

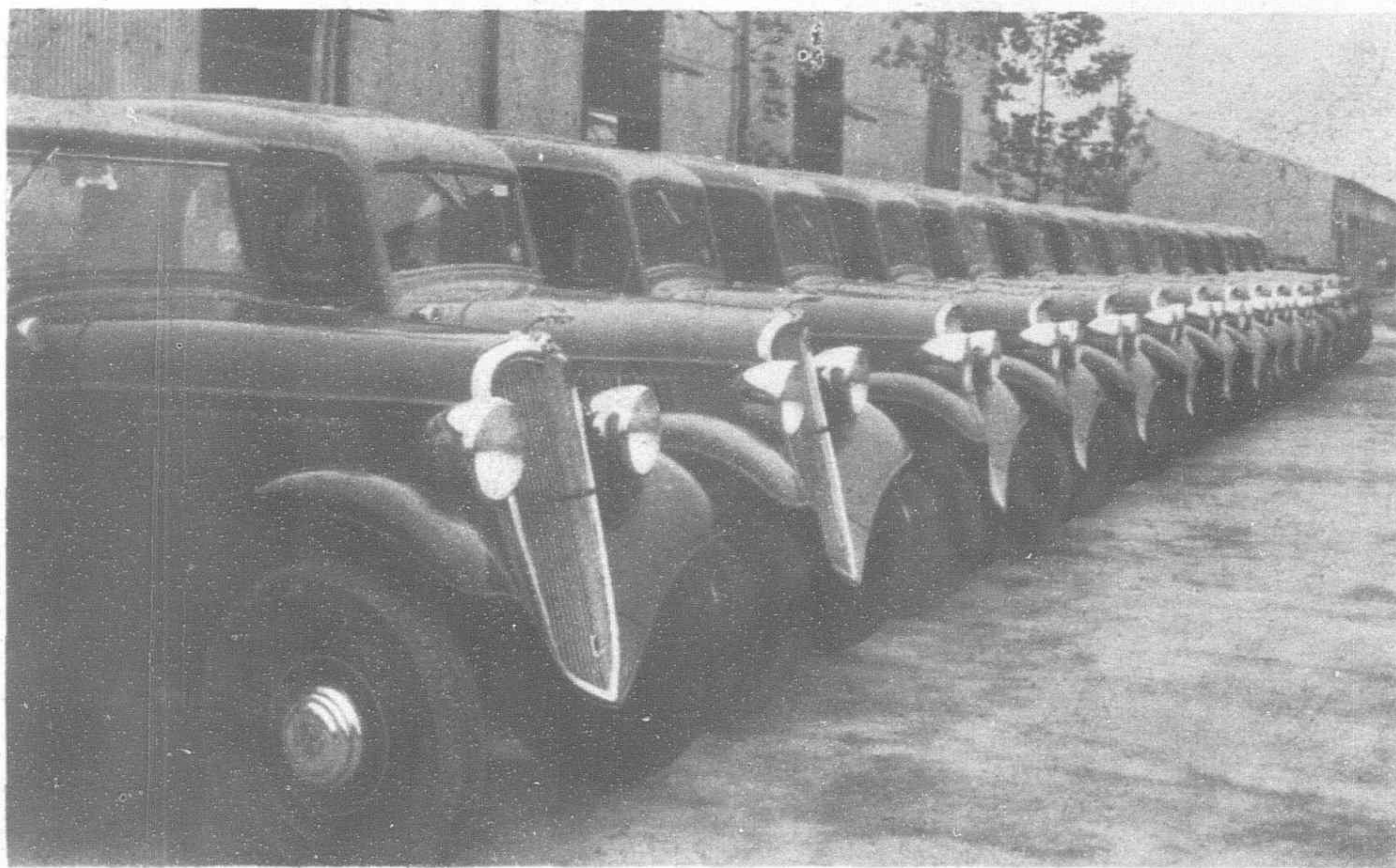
To make further assurance that the quality of the finished product is of the highest standard, materials used in production of various Datsun parts are specified according to regular American SAE standards as well as to Japanese Government

regulations. On the other hand, every effort is being made to educate and develop local manufacturers and other suppliers to produce parts to suit our motor-car requirements. When the stage is reached where this company need not be dependent on its sole efforts for all the necessary motor-car parts, the industry may lay claim to having made another extraordinary step forward in this country.

From the standpoint of mechanical skill in engineering and workmanship, every effort is being made by Nissan Jidosha Kaisha to make as accurate and as precise a part and product as possible, for the basis of mass production system is uniformity and interchangeability of parts. In this respect, this company, in comparison with foreign companies, is at a disadvantage for Japanese workmen lack the training of large scale manufacture. However, excellent results are now being attained.

Tracing back the history of the forerunners of the Nissan Jidosha Kaisha and the development of the industry, the first effort towards production of automobiles was made in 1923 when the Jitsuyo Jidosha Seizo Kaisha came out with the first purely designed Japanese passenger car the Lira. This was followed by the production of Dat trucks until 1931. With organization of the Nissan Jidosha Kaisha, the name of the car was changed to "Datsun," a light passenger car, being the offspring of the Dat truck.

With production of the Datsun now assured to take care of all the light car needs of this country, the Nissan Company has already prepared the ground for the next step, the entry into the standard or the larger car field. As plans have already been completed, it will be only a question of few months, when the new and larger Nissan car will be operating on all the motor-car roads in this country. As the nation has watched with great interest the establishment of the Nissan Jidosha Kaisha and the production of the Datsun car, atten-



Ready to Serve Public—A fleet of Datsun cars are shown ready for delivery to dealers and distribution to the general public



Popular Model for Two—Datsun Roadster is proving popular for young couples

tion is now being directed to the manufacture of the larger Nissan car, not only by those in Japan but also by other motor manufacturing nations which have vital trade interests here.

* * *

Further interesting engineering details of the 1935 "Datsun" car and its equipment were published in the July, 1935 issue of the *Japan Nickel Review*. Mr. K. Goto, engineer of the Nissan Automobile Company, points out that a few of the advantages of the 1935 model compared with the 1934 model are:

(1) The engine is the vertical L type, four cylinders, with detachable head, water cooled. The cylinder size is 56 mm. in diameter \times 76 mm. in stroke. The cylinder stroke is revised to 55 mm. \times 76 mm. and the piston displacement is reduced from 748 c.c. to 722 c.c. while the number of revolutions per minute is increased to 3,600 from 3,000. Thus the brake horse-power is raised to 15 h.p. from 12 h.p.

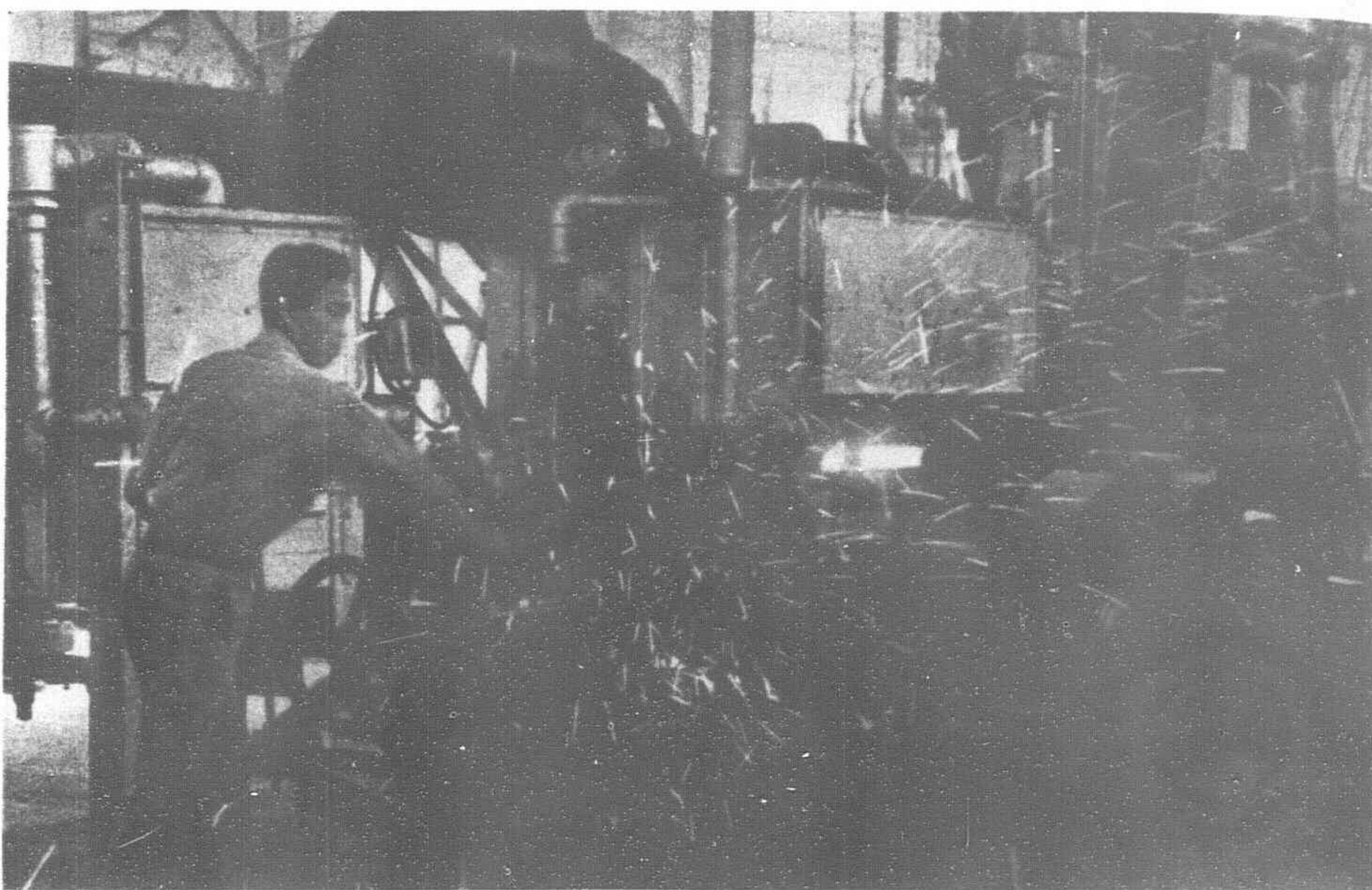
(2) To obtain a smooth operation and give longer life to the engine the materials for crankshaft, connecting rods, camshaft and other main parts have been improved by the use of nickel alloys.

(3) A temperature regulator is provided on the upper part of the engine to assure easy starting in cold weather.

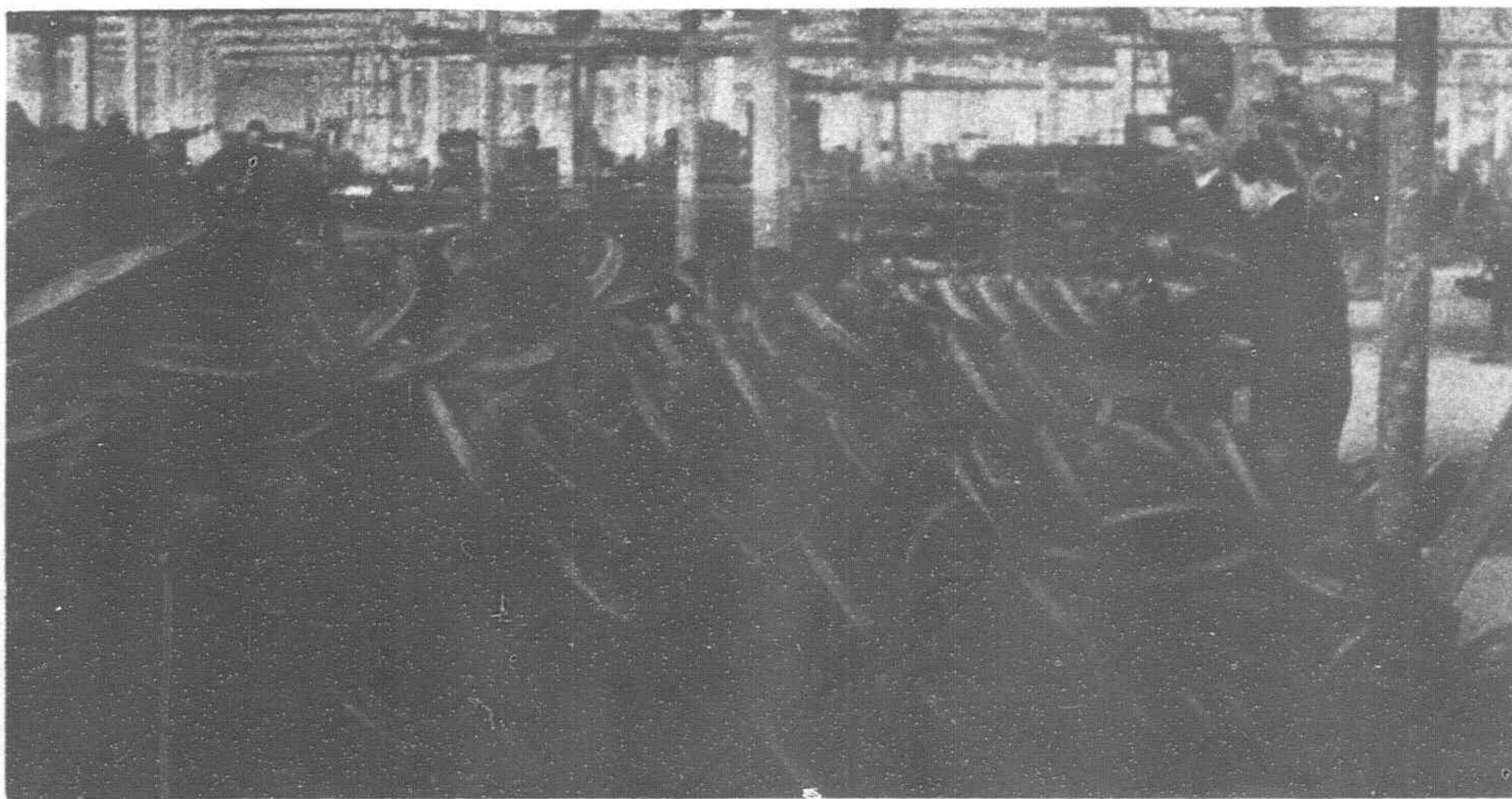
(4) Steel car bodies, frames, fenders and other sheet metal parts are all formed by special machines.

(5) The wheel base is lengthened to 2,005 mm. The frame is also lengthened by 75 mm.

These improvements have resulted in an increase in horse-



A section of the drop forging department



A heap of Ford brake drums manufactured at the Nissan Factory. Practically all Fords and Chevrolet cars in Japan are supplied with spare parts made here

power and a decrease in the cost of operation. Big car comfort in a baby car is claimed as well as the assurance of a longer life. Both the sedan and the phaeton carry four adult passengers, and can go fifty miles per hour with a fuel consumption of one gallon of gasoline. In other words, estimating the price of a gallon of gasoline at fifty sen, the cost of the fuel is one sen per mile, and the total running expense including lubricating oil, wear and tear of tires, taxation, etc., is only 2.3 sen per mile.

One of the principal reasons for the low running expense is the use of nickel alloys for the main parts of the automobile. Nickel alloys greatly increase the tensile strength of these parts, and wear resistance is highly improved. An increase of the safety factor, and a reduction in weight which results in economy of fuel consumption have all been effected by the introduction of nickel alloys.

The various parts made of nickel alloys are as follows:

S.A.E. 3140 (Ni 1.0 per cent—1.5 per cent)
Connecting Rod Bolts, Speed Meter Gear, Mainshaft, Front Axle, Knuckle Spindles, Knuckle Arms (left and right), King Pins, Drag Rod Ball Washers, Tie Rod Ball Studs, Torque Rod Ball, Torque Rods Axle, Rear Axles, Steering Arm, Drag Rod Ball Seats.

Total weight of the alloy steel . . . 29.427 kg

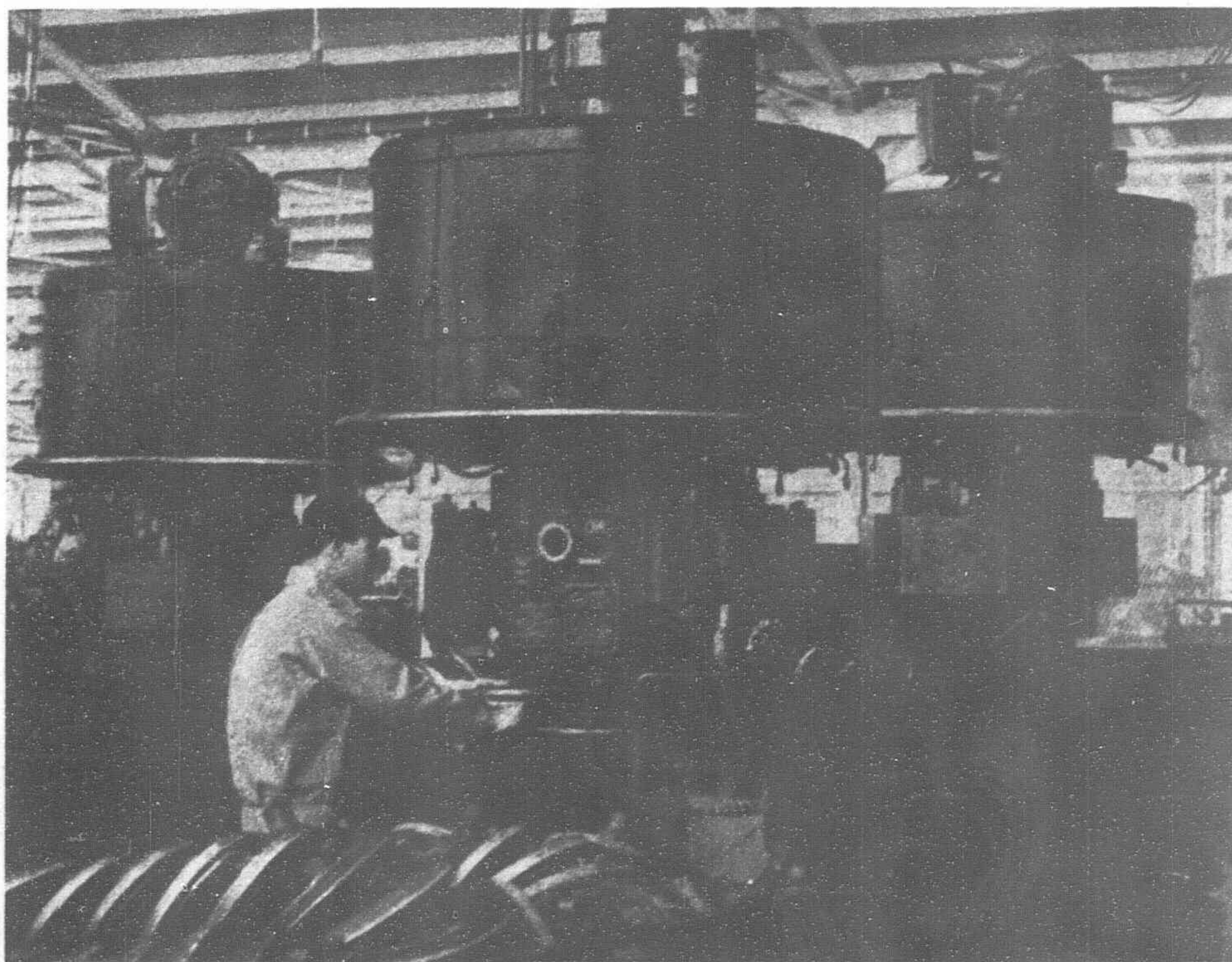
S.A.E. 3312 (Ni 3.25 per cent—3.75 per cent):

Steering Worm Sector 450 gr.

S.A.E. 3335 (Ni 3.25 per cent—3.75 per cent):

Intake Valves, Exhaust Valves,
Universal Centers, Universal
Caps

Total weight of the alloy steel . . . 1.837 kg



A set of vertical automatic lathes, an important part of the equipment of the Nissan Factory

Ni-Cr-Mo-Steel (Ni 1.25 per cent—1.75 per cent):

Distributor Drive Gear,
Speed Meter Worm,
Clutch Gear, Top and
Second Sliding Gear,
Low and Back Sliding
Gear, Counter Gear
Shaft, Back Idle Gear,
Bevel Wheels, Bevel
Pinions, Pinion Shaft

Total weight of the alloy
steel 6.289 kg

German Silver (Ni 14 per cent—18 per cent):

Main Needle Valve and
Idling Needle Valve

Total weight 11.08 gr.

Y Alloy (Ni 1.8 per cent—2.3 per cent):

Piston.. .. 642 gr.

Ni-Cr Cast Iron (Nr 1 per cent—1.5 per cent):

Cylinder 25.5 kg

Cylinder Head 6.0 kg

In 1934, with a first expenditure of Y.10,000,000 the Nissan Automobile Co., built a factory covering about 12,000 *tsubo* in their plot of ground which consists of 65,000 *tsubo* of the reclaimed land of Koyasu in Yokohama. In this plant over 800 machine tools of modern type American makes are installed. Each machine is driven by an independent electric motor and no pulley or belt is to be found in the whole plant. Therefore no power is wasted and the running expenses are minimized.

One of the noteworthy improvements of the factory is the installation of facilities for the manufacture entirely by machinery, of steel car bodies, fenders chassis frames and other sheet metal work. This eliminates much work formerly done by hand and economizes on the cost of production. Over one hundred special machines have been installed for making dies. To continuously obtain accurate products nickel alloy steel and nickel alloy cast iron are used for dies. However, as nickel cast iron dies are economical compared with steel, they will develop further in the future. The production capacity of the plant is 20,000 cars yearly. The principal dimensions of the standard cars are as follows:

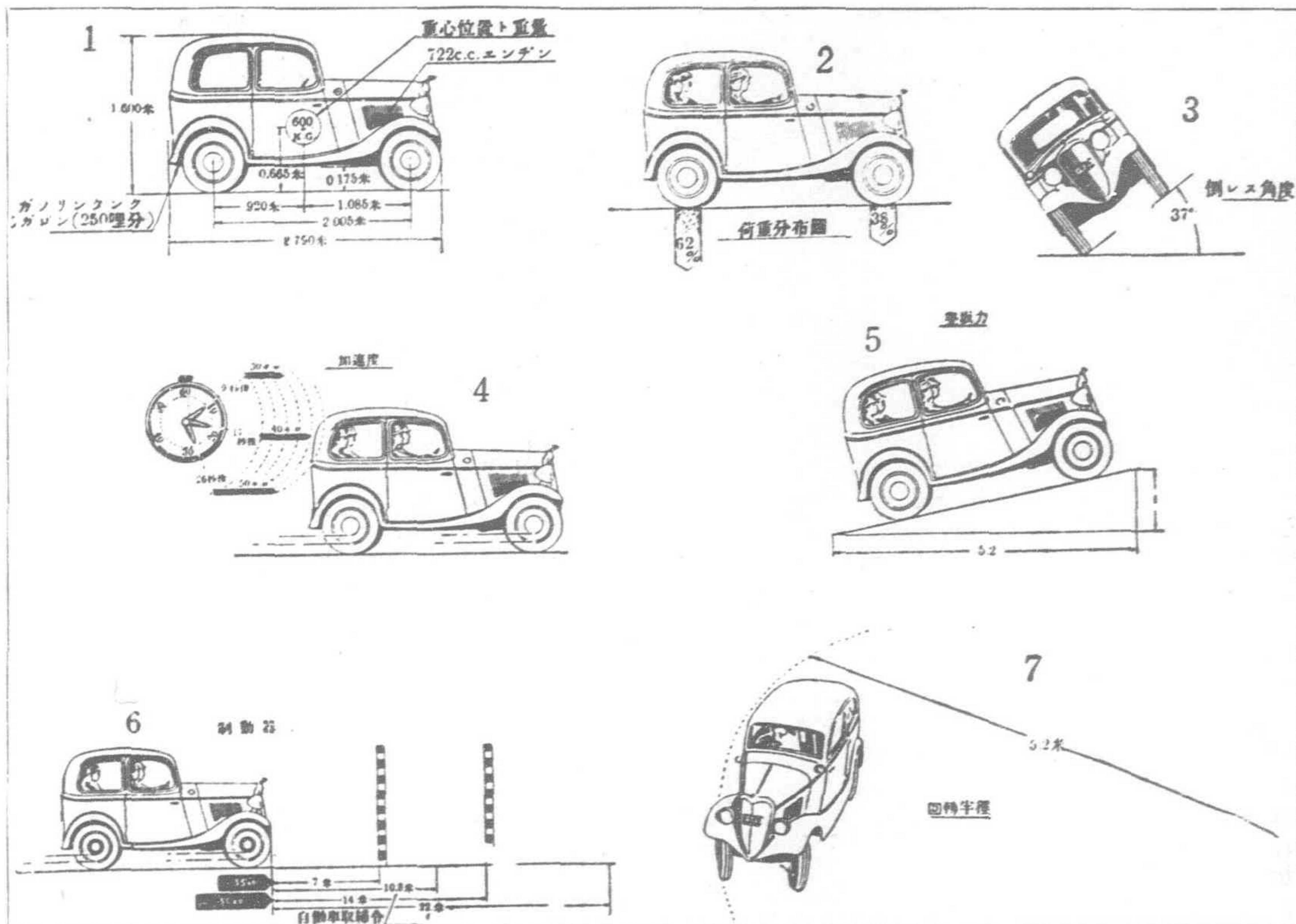
Car dimensions:

Overall length	2.790 m.
Overall width	1.190 m.
Overall height (Sedan)	1.600 m.
Wheel base	2.005 m.
Tread (Front)	0.990 m.
„ (Rear)	1.026 m.
Weight (Sedan)	600 kg
„ (Phaeton)	580 kg
„ (Roadster—2 passenger)	550 kg
„ (Chassis)	380 kg
Road clearance	175 mm.

Engine—water cooled, vertical L type, 4
Cylinders with detachable head.

Cylinder and cylinder cover of Ni-Cr cast
iron.

Cylinder bore	55 mm.
„ stroke	76 mm.
Piston displacement	722 c.c.
R.A.C. horse-power	7.5 h.p.
Brake horse-power (3,600 r.p.m.)	15.0 h.p.
Compression ratio	5.2:1



A Few Specialities of the Datsun Cars

- (1) The center of gravity in the 722 c. c. car, the weight of the car including five gallons of fuel for running 200 miles
- (2) Distribution of the load in the car
- (3) Safety angle
- (4) Acceleration: 30 km/hr 9 seconds after starting
40 km/hr 17 seconds after starting
50 km/hr 26 seconds after starting
- (5) Climbing Force
- (6) With a speed of 35 km/hr the car can be braked at seven meter, against 10.8 meter by regulation. With a speed of 50 km/hr it can be braked at 14 meter, against 20 meter by regulation.
- (7) Radius of car turning is 5.2 meter.

Pistons of special aluminum alloy are connected with the crankshaft. The crankshaft is made of special steel and supported by two large ball bearings, which minimize wear and tear. The connecting rod is of duralumin. The inlet and exhaust valves are made of nickel-chromium steel.

725 c.c. Datsun Truck Chassis

Capacity	500 kg
Wheel base	2.005 m.
Tread (Front)	0.990 m.
„ (Rear)	1.026 m.
Chassis weight with body	590 kg
Gear ratio	6.5:1 ; optional 8.67:1

Other specifications are the same as the passenger car specifications.

In closing the outline of the Datsun Automobile, I would like to mention again that the reason such a powerful engine displaces only 722 cubic centimeters and develops 15 brake horse-power is mainly due to the use of nickel alloys in the principal parts of the automobile, and it will be noted that the nickel content in the total nickel alloy of 70.156 kg used in a car is only 919.17 gr. that is, a little less than 2 lb.

Automobile Distribution in Japan

The number of automobiles in Japan reached a total of 134,859 at the end of October, 1935. This total includes all colonial possessions and mandated islands, representing an increase of 13,667 as compared with the figures on the corresponding date of 1934.

The number of passenger cars is still disproportionately small to that of trucks. The automobiles of local makers, which number some ten different types, have already reached a considerable figure, but the report fails to give the exact number of these domestic cars.

In the following table, special automobiles include tractors, road-rollers, steam automobiles, fire engines and the like, but not those vans equipped with motor cycle engines.

(Continued on page 235)

Sagami Railway Operates Diesel-Electric Cars

DESPITE the recent popularity of gasoline electric cars for short distances and less crowded passenger hauling, the Sagami Railway Company has recently introduced Diesel-electric cars on its principal line between Chigasaki, Kanagawa Prefecture and Hachioji, Tokyo Prefecture. After a long period of testing, the first unit was put on the rails last October and the other three were added later. This is the first effort of the kind on the part of a private railway company, though several tentative units of the same type are already running on some local short distance lines of the Government Railways.

The Sagami Railway's attempt is interesting to railway engineers since these units are equipped with Junkers (5, 4) type Diesel engine, instead of local products which are cheaper and considered to be perfectly compatible with this sort of small capacity traction. The Sagami has not announced why imported engines were adopted, particularly in this case.

The engine has four cylinders which develop 90 kilowatts at 1,600 r.p.m. The cylinders, each having a bore of 85 mm., are laid in two banks, upper and lower, the upper cylinders have a piston stroke of 96 mm. while the lower 144 mm.

All parts and accessories, except the engine, are produced by local makers. The bogie truck and body were designed and built by the Tokyo factory of the Kisha Seizo K.K., Osaka, a leading rolling stock manufacturer, while all electric plant, including generator, motor, lighting system and others, were supplied from the Tokyo Denki Seizo K.K., Yokohama.

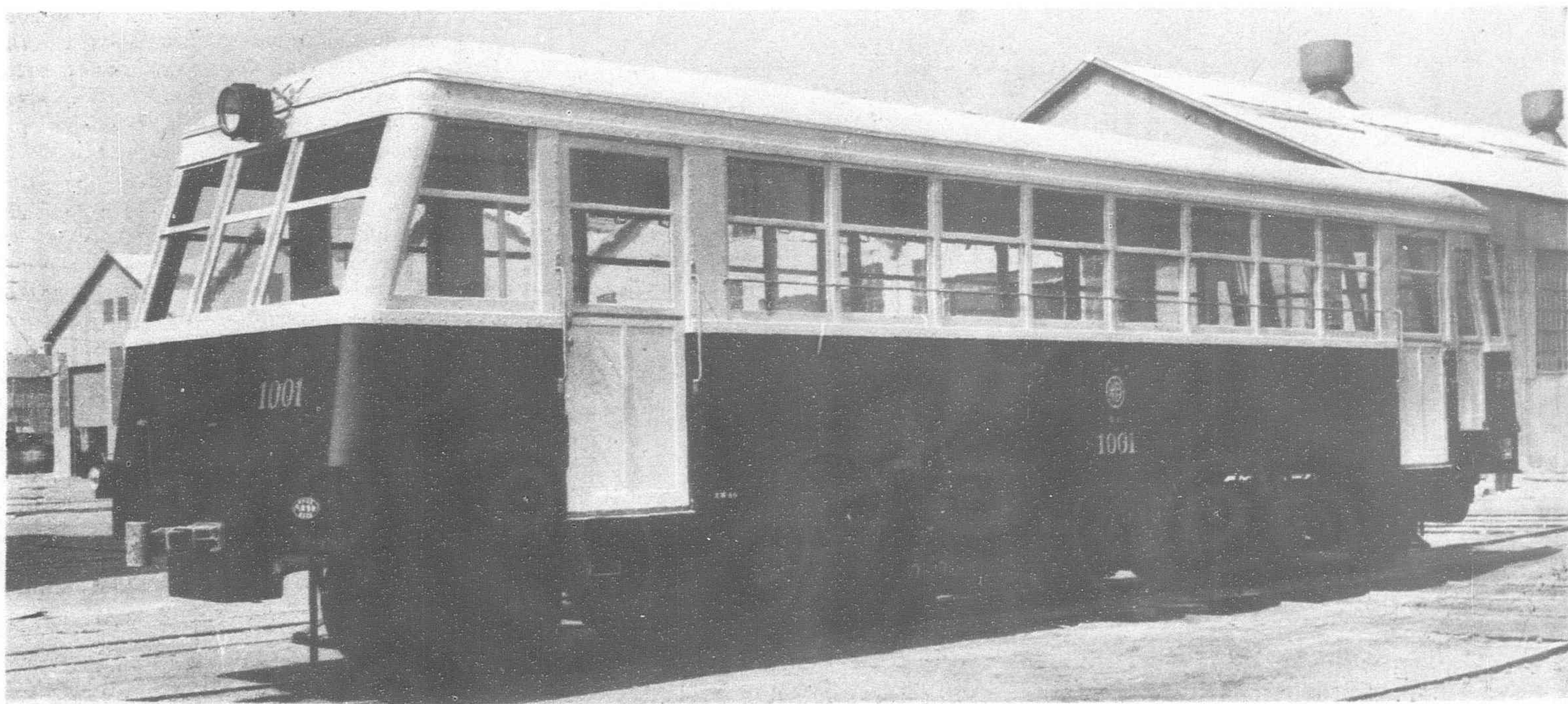
The body, which is 12.8 meters long, 2.6 meters wide and 3.63 meters high, is built much lighter than other cars of the same capacity, especially the Government Railways' gasoline-electric cars, weighing 17.5 metric tons when fully equipped for operation. It is designed to admit sunlight and breeze profusely, having 13 windows on each side and three on the front and rear respectively. The upper half of the body is painted white, and streamlining predominates in the design of the front and roof. The maker

claims that it is capable of developing 85 km. per hour under full load, accommodating 80 passengers in addition to luggage for which a floor space of 1.6 sq. m. is provided.

The bogie is a standard of the Kisha Seizo designated as LL-type. It has a gauge of 1.067 m. and a total wheelbase of 1.87 m. Its driving wheels have an outside diameter of 0.86 m. Principal bearing parts are provided with S.K.F. roller bearings. Braking consists of three systems, electric, pneumatic and hand brakes. The electric brake controls the operation in general for the most part, the pneumatic is applied just before stopping, while the hand brake is reserved for emergency control.

The generator is directly connected with the diesel engine, and the motors, two units in number, are connected in series. A Ward-Leonard system is employed to control the speed. The generator is a direct current shunt unit, rated at 70 kw. at 150 r.p.m. in continuous operation. The current is fed at 342-volt. The motors, which are of direct current series type, give an output of 54 kw. per hour at 900 r.p.m. The exciter is a direct current differential compound unit rated at 2.3 kw. at 1,500 r.p.m. Batteries with a total capacity of 245 amperes per hour supply lighting, starting of the engine and part of controlling.

The Engineering Bureau of the Ministry of Railway have given generous support in order to make successful this diesel-electric plan which is the first attempt on the part of private firms. The Sagami as well as the Kisha Seizo are confident of the success of the plan. It may prove quite a success as far at least as engineering advantage is concerned. Nevertheless, so far as economic advantage is concerned, many engineers see a rather gloomy prospect for the plan. The cars cost too much, reportedly Y.40,000 each, which is obviously more than twice as dear as gasoline-electric cars, while their passenger capacity is only 80 each. Moreover, the cars are operated without drawing any trailer car. Consequently this type of railway car will not become a common and popular practice unless the Sagami can successfully overcome the various economic disadvantage which are inherent with it.



Diesel-Electric Car for Sagami Railway, bogie truck and body built by the Kisha Seizo Kaisha, operated by Junkers 54 type Diesel engine

Dairen Airport to be Enlarged

Extensive improvements in the facilities of the Choushui Airport, seven miles north of Dairen, now badly taxed by the ever-growing traffic, have been drafted by the authorities, the Kokutsu News Agency reports the plans provide for the construction of concrete waiting premises, an office of the Bureau of Communications, a weather observatory and a radio station of the Manchuria Air Transport Company.

Three concrete runways, 600 meters long and 60 meters wide, will also be built under the plans. The airport will be connected with the city by a wide motor road and will have extensive parking grounds. A total of 1,780 passengers and 534,000 items of mail passed through the airport between April, 1934, and March of this year, showing a phenomenal increase over the figures of the preceding year, the news agency said.—Rengo.

The Vehicle-Diesel Engine in China

THE completion of more than 100,000 kilometers of motor roads in all parts of China has been one of the outstanding achievements in China's reconstruction work during the past years. Logically, the task for the present moment is to determine the most efficient means of transport for these highways, a task which, if accomplished, means nothing short of an entirely unprecedented development of national communications, because it spares the country the hitherto usual but useless period of small short-distance railways, which proved to be inefficient and consequently uneconomical years ago in practically all parts of Europe. Exhaustive investigations and very interesting trials have been carried out meanwhile on various highways all over China, and the moment, when a decision as to the most suitable type of vehicle could and should be reached cannot be far ahead. It may be worth while, therefore, to review the situation in the present decisive phase of development.

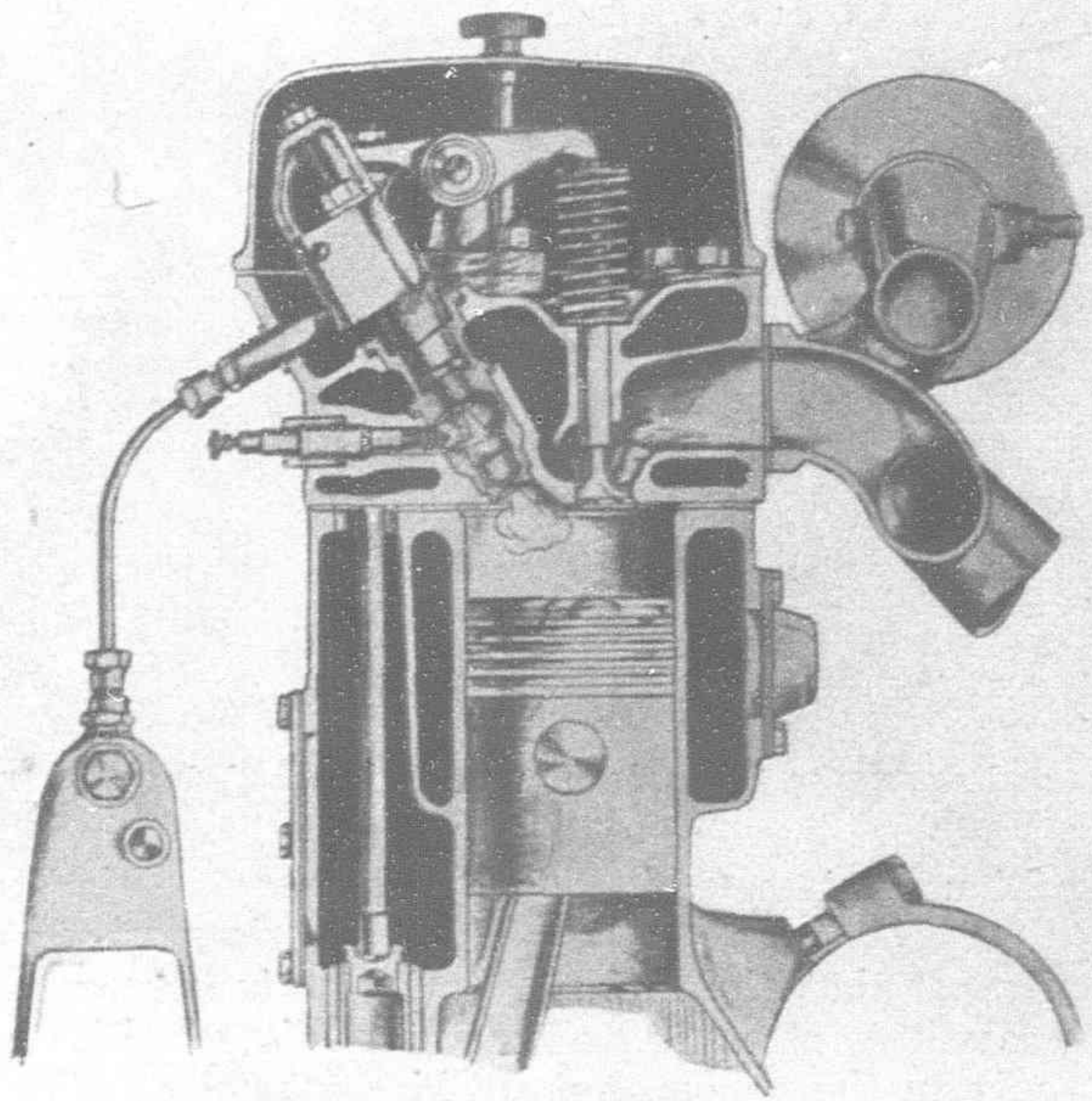
The Private Passenger Car may be disregarded in this connection. Of course, one must not underestimate the importance of tourist traffic, but naturally the potential factor for the further progress of motor traffic, seen from the constructive and economical point of view, lies in the development of the regular passenger- and cargo-transport. Moreover the technical development of the passenger car has reached a stage of perfection in its design and its essential construction elements, which is generally agreed upon as being the optimum, and leaves only limited possibilities for future improvements. Not so the Commercial Vehicle, i.e. the Bus-and Truck-Chassis! While in other countries one of the various types of engine and chassis is more or less accepted as standard, construction questions of fundamental importance are still left open in China. The vehicle market of this country is to-day characterized by the competition of the gasoline motor against the diesel engine, which began to attack the previously

unchallenged monopoly—position of the former only two or three years ago. But also in the western countries the diesel-chassis is a comparatively new appearance.

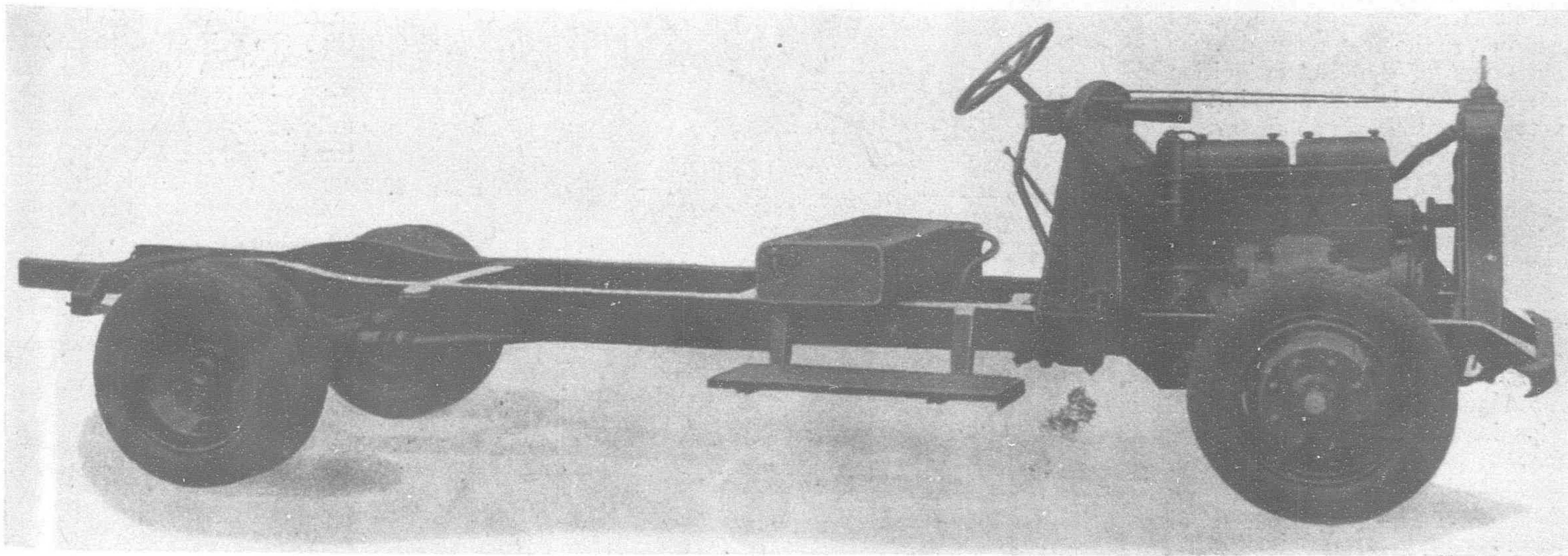
The value of the diesel-engine as a reliable, powerful and exceptionally economical unit for stationary and marine purposes had been established for years, but nevertheless two essential requirements of the car-constructor remained unaccomplished, namely, light weight and wide speed ranges.

It was first in Germany that leading motor works took up the issue, forced by the ever increasing demand for crude oil-driven trucks and buses, which arose as a result of the high cost of gasoline fuels. Different ways of construction were followed; years and years of research work passed; in the end, however, the diesel-driven vehicle was a reality. It took more years to develop the best and cheapest methods of production and to introduce the new vehicles to the public. But to-day there is no doubt, that the diesel engine is the absolute ruler in German Road Transport, be it the short-distance traffic of the big cities, or the high-speed long-range traffic of the modern superbuses and truck trains on the new gigantic motor highway system. It may be recalled also that diesel-driven airplanes have been constructed and have achieved very promising results in their first successful flying tests. Furthermore, the new German airships are equipped exclusively with Diesel engines of the Daimler-Benz make.

Following the German start very closely, British factories developed a nice series of diesel engine-types and nothing can prove better the success of the diesel car in England, than the recent decision of the London Passenger Transport Board, which controls one of the world's largest bus traffic organizations, to switch over the entire fleet of vehicles from gasoline—to diesel engines. Even in the American motor industry, which always favored the gasoline engine, the first attempts in Diesel construction have



Cross section of Cylinder of Diesel Engine used on trucks and busses manufactured by the Daimler-Benz Works of Gaggenau, Germany, represented in the Far East by Messrs. Jebsen & Co., Shanghai



Showing Chassis of Truck with Mercedes-Benz Motor Manufactured by the Daimler-Benz Works of Gaggenau, Germany

already been completed, partly using German patents in license, and some models recently appeared on the market. Naturally it will take some time, before the European lead in this line of motor production will be equalled.

All these facts of Diesel history prove better than anything else the superiority of the diesel engine, and it is safe to predict a similar development for China, because the same advantages, which made the success of the diesel engine elsewhere, are effective in this country. The superior technical features of the diesel engine may be summed up in the following four points:

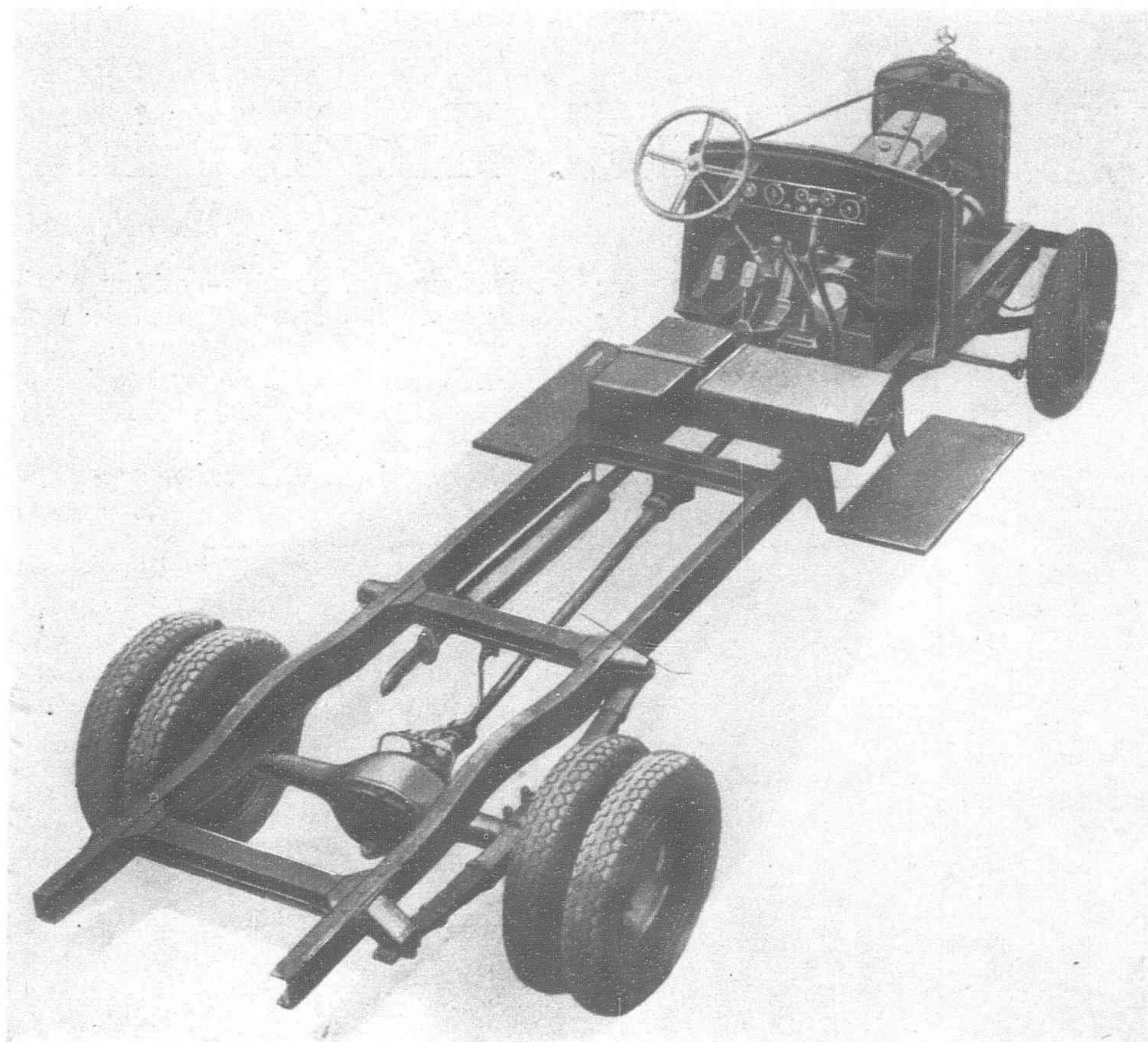
- (1) Use of cheaper fuel
- (2) Consumption of less fuel per mile
- (3) Stronger construction elements in every part of the motor
- (4) Elimination of the electrical ignition system and its troubles.

Regarding item (3) it must be remembered, that the higher combustion pressures of the diesel engine necessitate stronger and sometimes heavier construction parts, not only in the engine, but in the whole chassis as well, especially in transmission shafts and rear axles. On the other hand, these stronger parts are also more capable of enduring the additional strain resulting from the driving itself, as for instance acceleration and brake-reactions, overload, etc.

The point gains special significance in view of the heavy working conditions prevailing for any motor vehicle on Chinese highways. Indeed comparative statistics, which have been compiled in China by careful recording work, extending over several years, show clearly, that, in comparison with one of the very best gasoline-driven chassis, the diesel engine has a much longer life not only as a whole unit but also in every single part, so that the cost of spare parts per kilometer covered amounted to less than two-thirds of that of the gasoline chassis in question.

While the aforementioned item means better economy for the diesel car owner, so the next point, i.e. the replacement of the electric ignition system by fuel injection equipment means more reliability. Even the best electrical motor equipment cannot but consist of thin wires and tiny insulation parts, which are liable to a comparatively quick wear and tear under adverse conditions. The fuel injection equipment however, the prototype of which is manufactured by the famous works of Robert Bosch, Stuttgart, and which is used practically on every diesel engine in the world, consists in its essential parts of massive, high-quality steel, which is worked on precision machine tools with accuracies of a thousandth of a millimeter.

But the most important point, on which a comparison of diesel



Another view of the Chassis of truck showing the Control Board

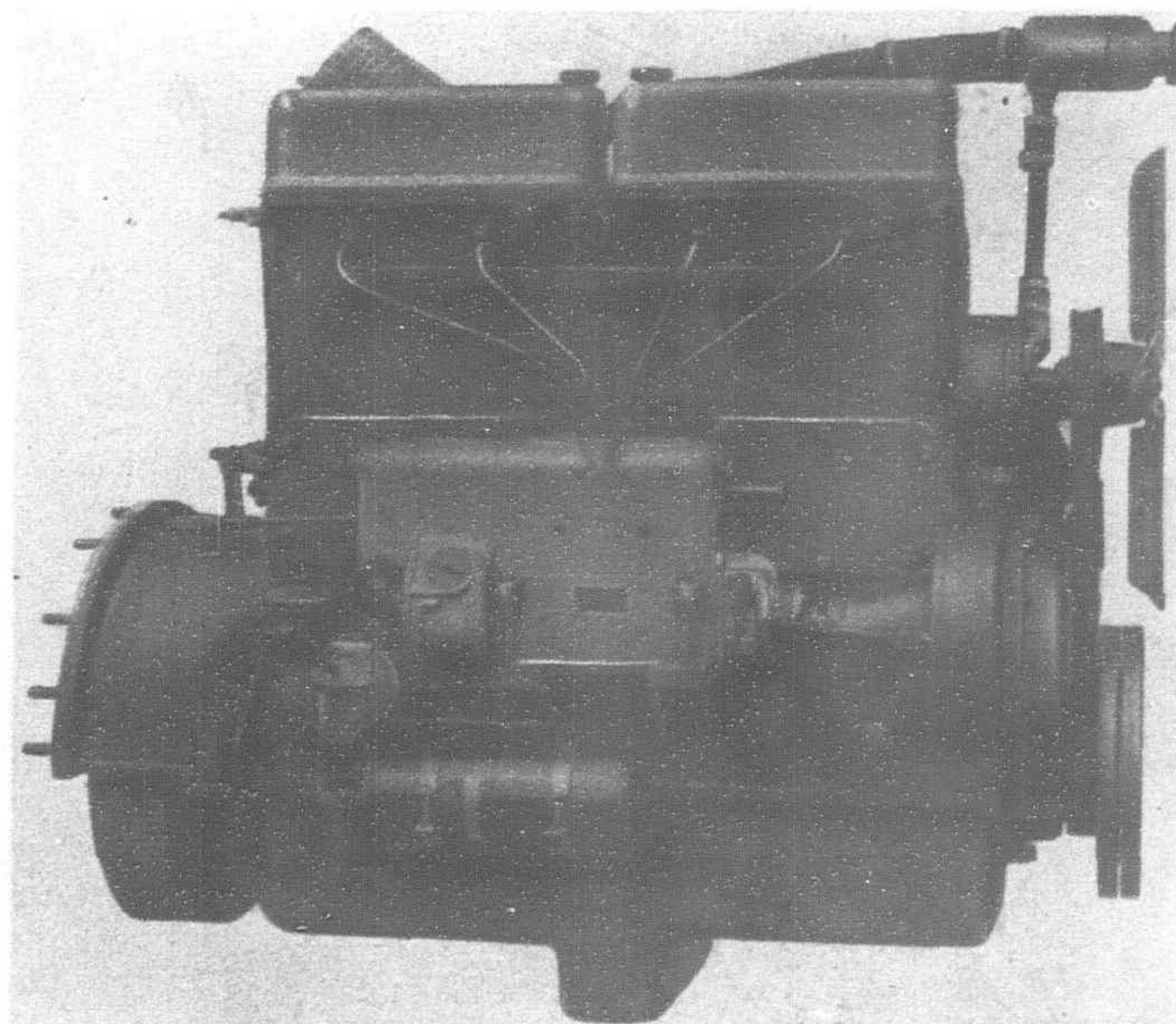
prices consequently the saving in fuelcost effected by diesel-engines in comparison with gasoline engines is not as large in these territories, as in other places. Of special interest are therefore the results achieved with diesel trucks in one of the most remote parts of China, namely the North-Western provinces of Shensi and Kansu. Under the supervision of the National Economic Council extensive trials were carried out on the Sian-Lanchow highway with a number of Mercedes-Benz Diesel cars. The last of these trials took place in December 1935 under the most severe conditions imaginable, and delivered the following results:

- (1) *Fuel Consumption.*—For the whole journey from Sian to Lanchow and back, i.e. a total distance of 1,612 km (equivalent to more than 1,000 miles) 90 Am. Gallons of Utility Diesel oil were used, which is equal to a mileage of 11-12 miles per gallon.
- (2) *Time needed for the journey.*—The trip from Sian to Lanchow was completed in 3½ days or 36 driving hours, while

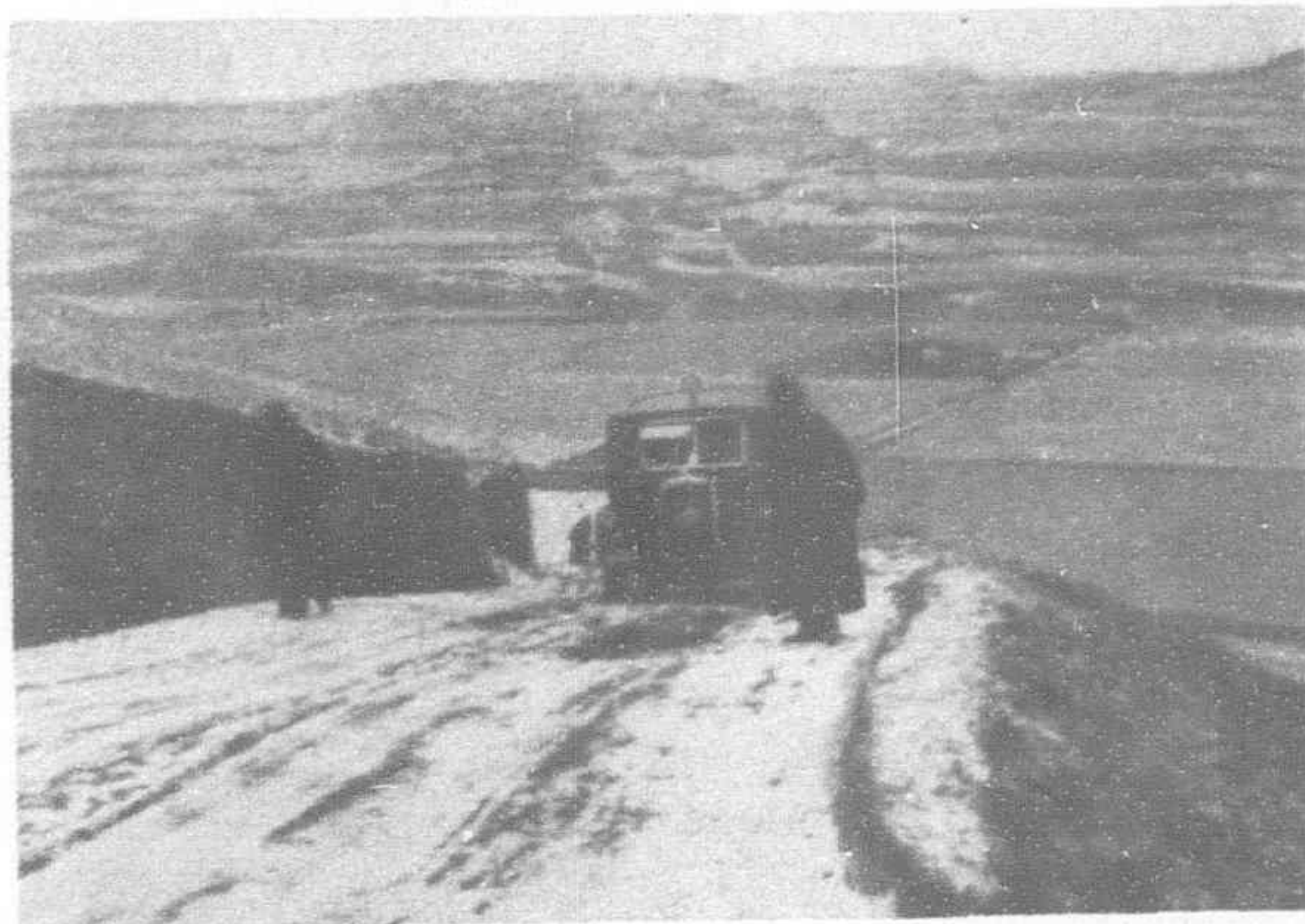
on the return trip the distance was covered in six days, owing to snow storms, which at times made the visibility so poor, that the drive had to be interrupted. The time needed for driving on the way back was only 48 hours, so that the total for the whole route of 1,612 km comes to 84 driving hours, making the average speed about 20 km-hour.

- (3) *Climatic Conditions.*—Temperatures varying between minus 8° and plus 20° C (18 to 68°F.) were observed. At the same time heavy snowfalls occurred, covering the roads about 6-in. deep.

- (4) *Road Conditions.*—The Sian-Lanchow Highway is built of loess only and was at the time of the trial trip spoiled by cart-driving and overloaded trucks, partly covered with an ice-layer,



Pump side of the Mercedes-Benz Diesel Engine, showing the Bosch injection equipment



Photographs taken on the road between Sian and Lanchow during the trial runs of Mercedes-Benz trucks under winter conditions

partly consisting of a foot-deep mud, snow and water. The track leads through mountainous regions, partly at altitudes of over 8,000-ft., and makes long-distance inclines of 25 per cent or more, which necessitate continuous driving in the first and second gear, sometimes uninterrupted for several hours.

A simple calculation based on the first of the above items shows, that the cost of fuel for the whole journey was \$34.50, taking the actual price of the Diesel fuel used, prevalent at that time in Sian. The corresponding price for gasoline being \$1.65 to \$1.70 per American Gallon and the average fuel consumption of a gasoline engine of equal capacity being 6.9 miles per gallon, the fuel cost per trip for such an engine would amount to about \$240. The diesel truck, therefore, effects a saving in fuel, which alone amounts to at least \$205 per trip of 1,612 kilometers. Since the trip, even under the most adverse conditions, as prevailing in the case described, takes only seven to eight days, a car may easily complete 45 to 50 runs per year, so that the saving in fuel cost alone for every single diesel car must come to at least \$10,000 per year. In other words, more than the purchase price is saved by each car in one year on fuel alone.

When judging these results, one must bear in mind, that they were arrived at in a place, where all conditions are unfavorable to any kind of motor transport in general and to diesel trucks in particular on account of comparatively small differences in fuel prices, as pointed out before. In other parts of the country, which are nearer to the coast and have better highways, the saving in fuel cost is even greater. It is safe to say, that a Bus- or Truck-Company with a fleet of about thirty vehicles can easily save \$250,000 each year by using diesel cars. While pioneers of the road transport business have already realized these possibilities of improved economy and additional profits, it is expected, that with knowledge of the underlying facts becoming more and more general, further transport companies will avail themselves of the advantage of diesel cars.

The most noteworthy thing however is, that the subject of fuel saving is not only of decisive importance for the comparison of diesel-and gasoline-engines, but at the same time provides a clue for judging the different makes of diesel engines among each other. For there are several types of diesel engines, which work according to very different technical principles, and may be classified in the following four groups:

- (1) Semi-Diesel Engines, burning diesel oil, but working with a carburettor and electric ignition.
- (2) Diesel Engines with Direct Injection; here the fuel is injected by means of a nozzle directly into the combustion chamber.
- (3) Full Diesel Engines with Pre-injection Chamber according to the Daimler-Benz Patents.
- (4) Air-chamber Engines, which are more or less an imitation of the principle embodied in the engines mentioned under the previous group; however they differ with regard to the relative location of combustion-and air-chamber in a way, which reduces the original efficiency rate, i.e. the proportion of effective power and fuel consumption.

While the Semi-Diesel Engine is a sort of compromise and still shows some of the disadvantages typical of a gasoline engine, namely, high fuel consumption, susceptibility regarding the quality of fuel and absolute dependence on electrical equipment, the diesel engine with Direct Injection is a true diesel motor.

Before going further into the matter it is necessary to explain some details of the intricate process taking place in the diesel cylinder during the few thousandths of a second, which constitute the essential phase of the working cycle. If the piston is about to reach its upper position at the end of the compression stroke, pressure in the combustion chamber is approximately 35 at. (=498 lb/sq. in.) At this moment the fuel must not only be injected into the cylinder, but it also has to be atomized to a high degree and to be equally distributed throughout the combustion chamber.

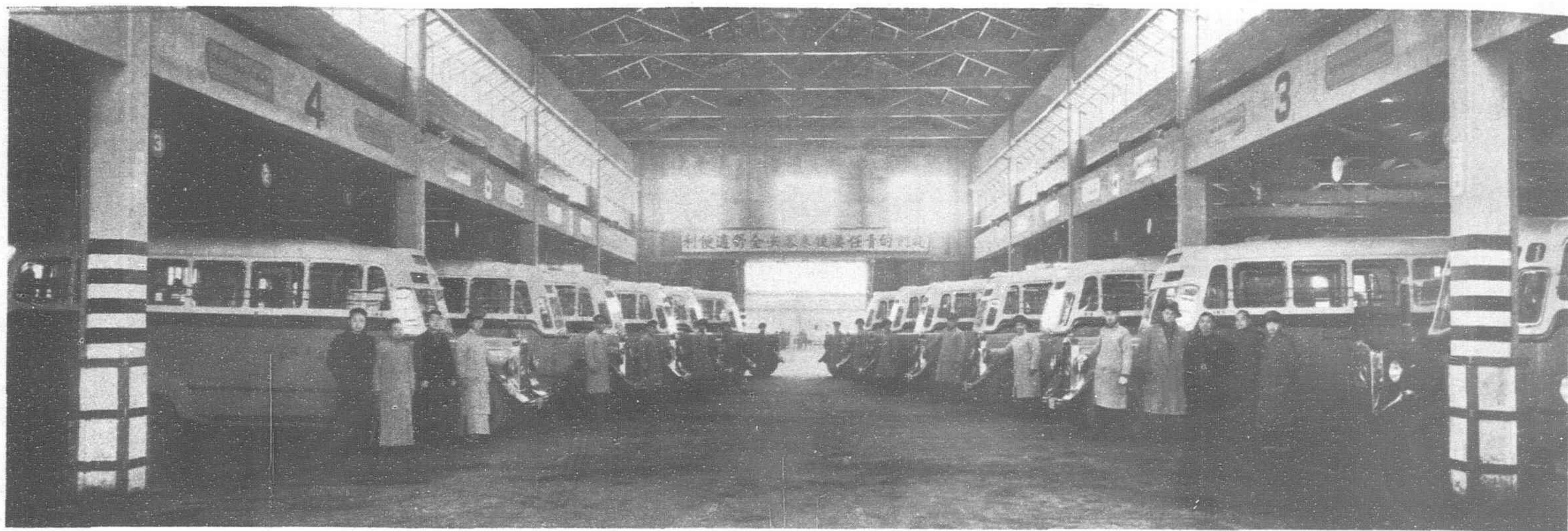
The more intense the atomization of the fuel and consequently the mixture of fuel and air, and the more uniform this mixture can be distributed in the combustion chamber, the greater will be the utilization of the fuel-energy and simultaneously the power-yield of the engine. Indeed this is the crucial point of the entire diesel-problem and its technical solution in the various designs is a true indicator for the quality of any diesel engine.

Because of the high pressure already prevailing in the cylinder before the beginning of injection and the short interval between this moment and fuel ignition, available for the completion of injection, atomization and distribution of fuel, strong forces are required for this purpose. It is in the means producing these forces, that the difference between the Direct-and the Pre-injection system lies. The former employs a nozzle with several holes, which spray the fuel in three to seven different radial directions into the cylinder. The injection pressure, in order to atomize the fuel, has to be very high, approximately 170 at. (2,417 lb. sq. in.) Naturally these high pressures of the direct-injection engines alone affect the fuel pump and its parts most severely, accelerating the wear and tear of these parts in a way, which compares rather unfavorably with the long life of the injection equipment of a pre-chamber engine, where fuel pump elements and nozzles are exposed only to low pressures of about 80 to 85 at. (ca. 1,170 lb/sq. in.) Experiences in Europe have proved this already. In direct-injection engines, moreover, the distribution of fuel is limited more or less to the area covered by the nozzle holes and therefore cannot be absolutely even.

The pre-chamber engine works on an entirely different principle. Here the nozzle has only to perform the actual injection of the fuel, while the function of atomizing, whirling and distributing the fuel is taken over by the so-called pre-injection chamber. This is a small combustion chamber, connected by way of a special X-shaped passage with the combustion chamber proper. The fuel is injected by the nozzle into the pre-chamber, where a partial combustion, dependent on the amount of oxygen in the pre chamber, begins. The energy emanating from this partial combustion is used to inject all the unburned fuel from the pre-chamber at a high velocity and vehemence into the combustion chamber proper,



A Mercedes-Benz Bus used by the China National Aviation Corporation, pictured at the Civic Center, Shanghai



Showing part of the Mercedes-Benz fleet of busses used by the Kiangnan Bus Company in shed at Nanning

thereby effecting a much more intimate mixture of fuel and air, than any pump-charged injection nozzle could produce. In fact the whole pre-chamber together with the special passage acts as a powerful nozzle entirely independent of the injection equipment. The enormous atomization energies created by the pre-chamber are the reason why more power is derived from any given fuel in such engines, than in any other, and here lies the simple secret of the success of Daimler-Benz engines in both efficiency and fuel-saving. The independent function of the pre-chamber constitutes an additional advantage, because in spite of the great pressures developed and utilized for the preparation of the fuel for combustion, the actual nozzle-and pump-pressures are comparatively small, so that the valuable injection pump parts are relieved and therefore do not wear off as quickly as in an engine with direct injection.

The pre-chamber injection system as a whole may be compared with the electrical relais system (reinforcement-valves in receiving sets); in both instances small energies received are transformed into large energies to be passed on. It is also interesting to know, that the combustion in the pre-chamber engine after the first injection progresses in a multi-stage process, oscillating between pre-chamber and combustion chamber proper in a way comparable to the electric alternating current. Thus, the pressures taken up by the piston, though very powerful, are not occurring like hard, momentous blows, but in the form of evenly increasing and decreasing forces, resulting in the comparatively smooth running of the engine, for which Benz Motors are noted.

At a time not too long ago, the above ideas and conclusions, maintained by a small minority of experts, were much discussed theories. To-day they are confirmed by experiences all over the world, and therefore must be regarded also as the explanation for the successes of diesel cars with pre-chamber engines in China, as described before.

However it would give the reader an incomplete picture of modern Diesel development, if these lines were confined to those merits of the diesel engine, which are already established facts. It was pointed out before, how rapid the progress in diesel technique has been during the past years, and indeed also at this moment great achievements lie ahead of us.

If the first fundamental success of the diesel engine was the switch-over from gasoline to diesel oil, it is only logical, that the next one should be the step from diesel oil to still cheaper fuels of respectively lower qualities. In fact the first efforts in this direction have already been made with the introduction on the fuel market of the so-called Special Diesel oils and their mixtures, which can be supplied at about 45 per cent of the cost of proper diesel oil.

It is significant, though not surprising, that here again the pre-chamber engine leads the field. With all other diesel engines difficulties were experienced with the use of these Special Oils. While some engines could not run at all on these fuels, others began to knock and showed a very smoky exhaust, which only recently gave rise to severe criticism of bus-traffic conditions in Shanghai. On the other hand, the pre-chamber engine, owing to its greater atomization-power, runs just as well on Special Diesel oils as on any other grade of proper diesel oil, provided of course, that the engine is in a correct working condition and the injection equipment duly adapted to the fuel.

This favorable result with low-grade Diesel fuels obtained with the pre-chamber type induced the technical staff of the works at home and abroad, to go farther into the matter. It was in China, that people first grasped the idea of using organic oils as fuel for diesel engines. The first great surprise came, when a normal Mercedes-Benz truck engine, only fitted with a special fuel-filter, was started with usual diesel oil and then switched over to Soya Bean Oil. This unrefined oil was accepted by the engine without any hesitation, and even without any considerable decrease of power output. Nearly the same was the case with Cotton Seed Oil. The only remaining difficulty is the tendency of these oils, to get thick and stiff at lower temperatures and the fact, that they are not available on the fuel market in uniform qualities. However, tests are being carried out now on a scientific basis at the works in Germany in order to overcome these difficulties. Although it is yet too early, to predict a new development in detail, the results achieved with the above experiments leave no doubt, that these discoveries will have a profound effect on diesel-development before long.

Perhaps very few people realize to-day, what this possibility really means for the developments of China's commercial transport. In view of the vast and extraordinarily cheap home supply of Soya Bean Oil and especially Cotton Seed Oil in China, it means not only a stimulation to her road transport, which may soon bring the latter in line with European standards of communications, but it means perhaps in this branch of national economy a leading position for China among the big economic communities of the world.

Before these observations are concluded, due consideration should be paid also to the problem of charcoal-driven vehicles. At the present moment its technical development is still in its beginnings and cannot be regarded as a base for economical use. Especially the complicated starting and the lengthy cleaning and re-conditioning work required for these engines take away many of the characteristic advantages of a motor vehicle. Moreover the power-decrease on uphill-roads makes the charcoal vehicle entirely unsuitable for a hilly country. Naturally the running of these cars depends on an ample and cheap supply of suitable wood, so that, even if the technical developments of the charcoal engine overcomes the aforementioned difficulties, the present state of afforestation in China would prohibit the commercial utilization of this type of vehicle for at least ten years.

Manchoukuo Railway Merger

Control of all railway lines in Manchoukuo will soon be unified and the head office of the South Manchuria Railway Company will be transferred from Dairen to Hsinking, both steps being in accordance with the wishes of the Kwantung Army, the *Asahi* reports from Dairen. These moves are expected to be carried out by the end of July.

The General Direction of State Railways of Manchoukuo, at present located in Mukden, and the railway department of the S.M.R. now in Dairen, will be merged into one organization with headquarters in Hsinking, according to this plan. The whole will be placed under the direct supervision of the Government of the Kwantung Leased Territory, the Kwantung Army and the Japanese Embassy in Manchoukuo.

The Technical College of the Tung-Chi State University at Woosung

THE Foundation of the Technical College of the Tung-Chi University dates back to the end of 1910, when it was decided to establish, with the aid of German capital, this engineering college as an extension of the then existing College of Medicine in Shanghai. Chinese students were here to be taught in a manner similar to that of the German technical universities but adapted to the requirements of their country.

The courses were to be held in the German and Chinese languages, and German and Chinese professors were the teachers. The classes commenced on a small scale in June, 1912, and by the autumn of 1916, work in the engineering college was in full swing, the number of students being 341.

In the subsequent years, the college experienced many vicissitudes of fortune. During the world war, in 1917, the school was forced by the French police to leave its Shanghai home, but thanks to the energetic intervention of the Chinese authorities, who had formed a high opinion of the educational value of the school, it became possible to house it immediately in new and adequate quarters in Woosung, not far from Shanghai on the banks of the Yangtze River.

New difficulties arose after the termination of the world war, when the Government, under pressure from the Allies, was forced to decree the repatriation of the German teachers. Due, however, to the untiring efforts of the President of the School, Dr.-Ing. S. D. Yüan, who succeeded in gathering together a new staff of German teachers, the College was enabled to resume its work in the autumn of 1919. In 1923, the Ministry of Education raised the Tung-Chi institute, comprising the College of Medicine and the Engineering College, to the rank of a University.

One of the greatest blows that fell on the Tung-Chi University was the destruction of the buildings and scientific collections during the bombardment of Shanghai in the early part of 1932. The

University, however, recovered from this blow within a relatively short time, thanks to the energetic help of His Excellency, Minister Chu Chia-Hua, himself a graduate of the Tung-Chi University; the devotion of the university staff; and, not the least, to the generosity of German scientific and industrial circles, who effectually contributed to the reconstruction of the Technical College by numerous valuable donations. The University was thus enabled greatly to improve its instructional facilities.

Under the presidency of Dr. Ong Tsi-Lung, the Technical College has greatly expanded and may to-day be regarded as one of the most progressive engineering schools in China. The staff numbers thirty-nine professors, associates, instructors, and assistants, beside nineteen administrative and other officers. The majority of the professors are Germans who have had many years of teaching experience on German technical universities. A guarantee is thus afforded that the scientific work is of the highest order and in no way behind that of the German institutes. Language courses are given in German and English, the former to enable the students to follow the lecturers, and English because it is the principal foreign language of business.

The comfort of the students is catered for by the provision of pleasant homes in several buildings, a gymnasium, tennis courts, football and basket-ball grounds, and a swimming bath.

The practical training of the students is taken care of by employing them in a mechanical workshop, and it is to be particularly noted that this workshop is not a mere apprentice shop, but one where machines and machine tools are built for outside customers. The standard of workmanship therefore is very high, and the students receive a training which is quite on a level with that of factory work proper. By way of an example of what work has been turned out by this workshop, it may be mentioned that the whole pumping plant, of a capacity of 400 cu.m. (88,000 gal.) per

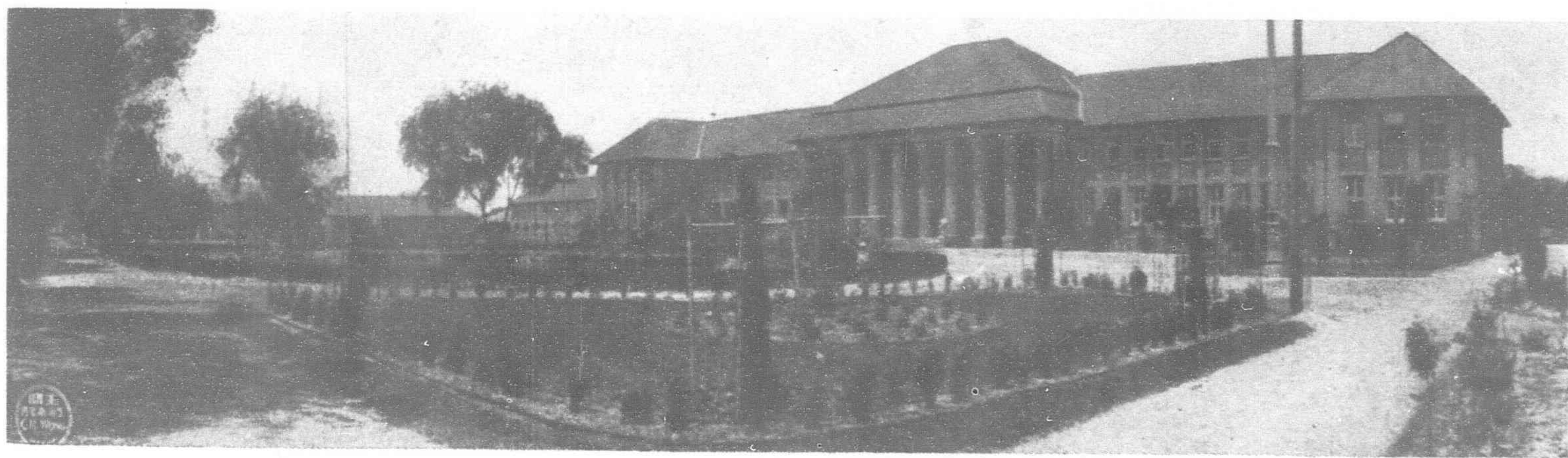
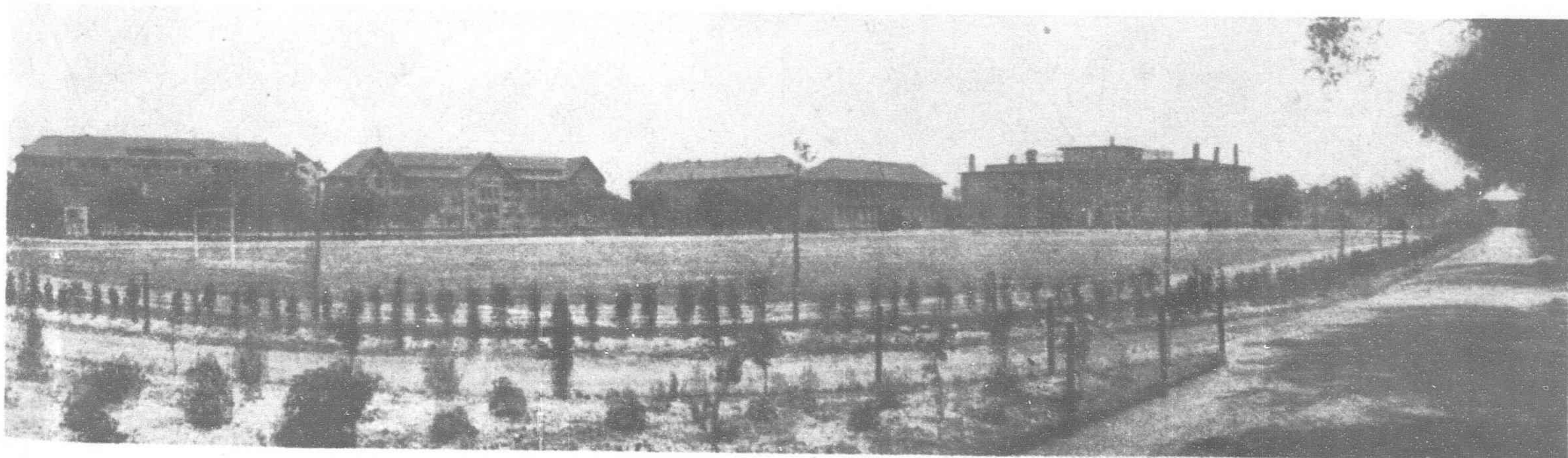


Fig. 1—General view of the Tung-Chi University at Woosung



A Vista of the Campus and Buildings of Tung-Chi University at Woosung

hour, for the hydraulic laboratory of the College has been built there, likewise several machine tools and fixtures requiring great accuracy of work.

The professional education comprises three sections, viz. Civil Engineering, Mechanical and Electrical Engineering, and Surveying. The syllabus of the College shows that the subjects taught correspond to those of the German engineering colleges. Special pains have been taken by the Management to build up and expand the laboratory facilities, and some of the laboratories rank among the best equipped in China.

There is, for instance, the hydraulic laboratory, in which model tests are carried out for the study of flow phenomena in pipes, weirs, or river beds. The practical value of these studies is very high; for, they enable all problems of river regulation, weir construction, etc., to be solved on a small-scale model, the solution of which in nature would be connected with great difficulties and entail enormous expenses, or would not be possible at all. It may be mentioned that studies are being undertaken at present in this laboratory with a view

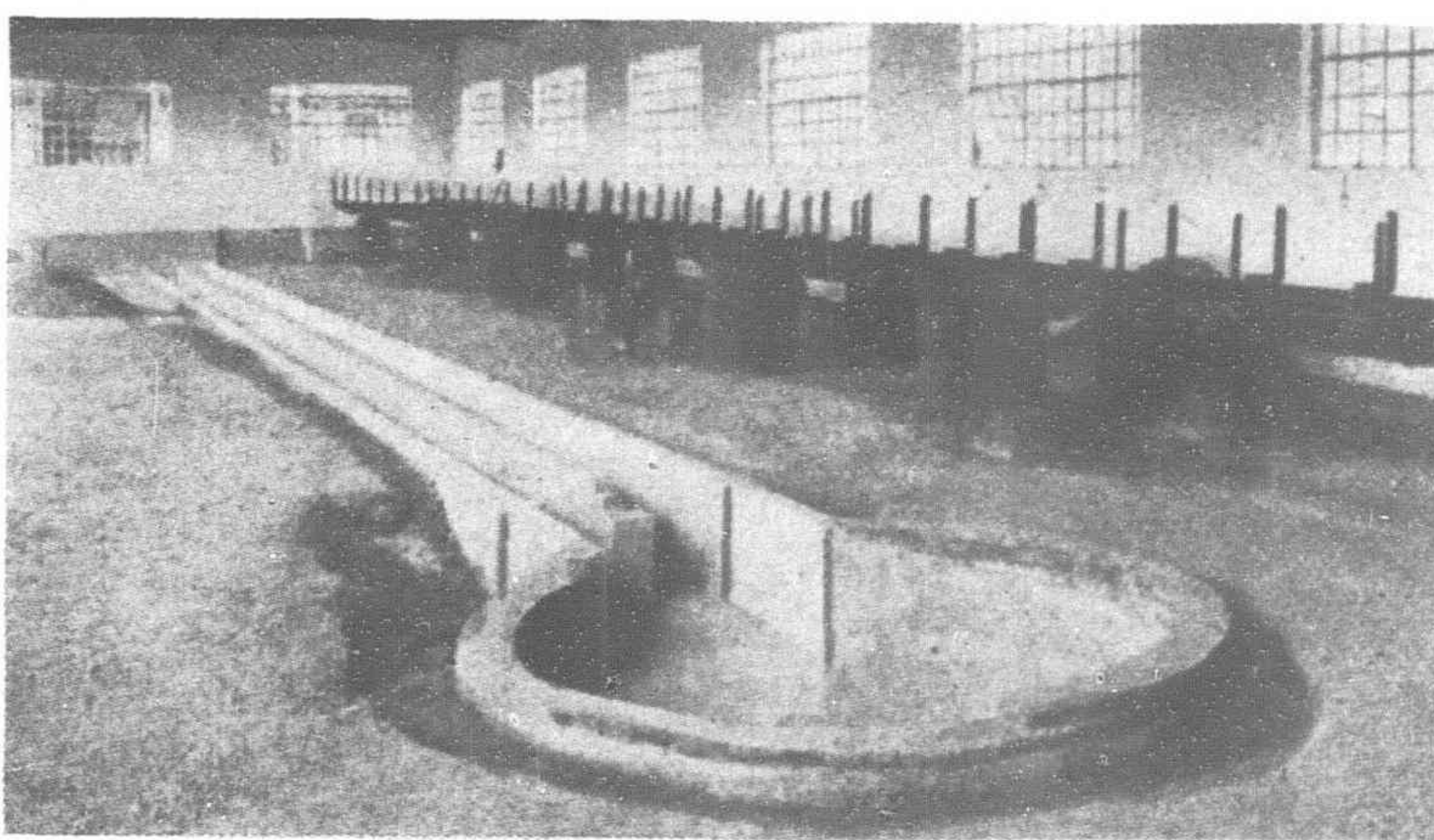


Fig. 2—View of the Hydraulic Laboratory in course of construction



Fig. 4—One of the Students' Homes



Fig. 3—View of the Institute for Testing Materials

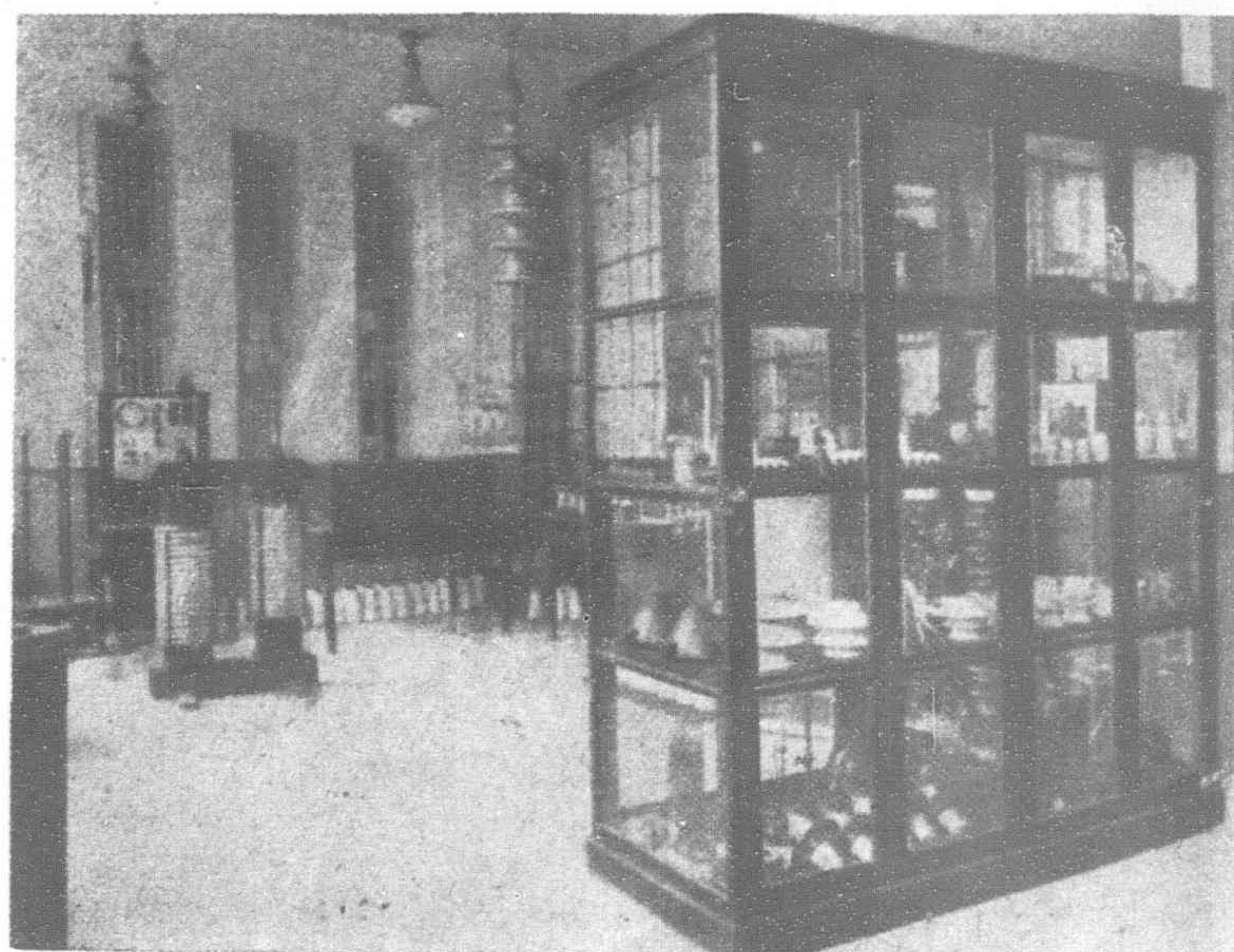


Fig. 5—View of the Electro-Technical Institute

to determining the best way of regulating the Hoang-Ho at the place where the Peiping-Hankow railway crosses it.

The machine laboratory and the institute for testing materials are equipped with the most modern appliances, which enable the tests to be carried out with the utmost accuracy and precision. The facilities offered by the material testing department are widely made use of by Chinese firms in connection with the acceptance of materials supplied to them. The equipment of the electrical and the physical laboratories likewise is being steadily enlarged and improved

upon, so that it has been possible to carry out a number of important investigations. The results of the scientific research work have so far been published only in German, but it is intended to issue a quarterly periodical in which the treatises will be published in both the German and Chinese languages, along with original articles from the pen of prominent scientists, in order to make them accessible to a wider circle of Chinese engineers and thus let a larger public share in the benefits of the valuable work done by the Tung-Chi University.

The Bangkok-Hanoi Railway

The imperial conference between France and her colonies—on the lines of the Ottawa conference—closed in Paris recently. It is worth noting that that conference expressed the opinion that it was time to be getting on again with the railway between Tanap on the railway line that runs along the coast of Annam and Thakek on the Mekong. That is the French section of the line that will one day connect Bangkok with Hanoi. It was begun in 1930, and about 80 million francs were spent before trouble in north Annam caused the work to be stopped, and the money to be devoted to irrigation. Siam has planned two lines from Khon Kaen to the Mekong, one of which is to reach that river at Nakon Panom facing Thakek. But the depression caused work to be stopped, and we really do not know what the present position is.

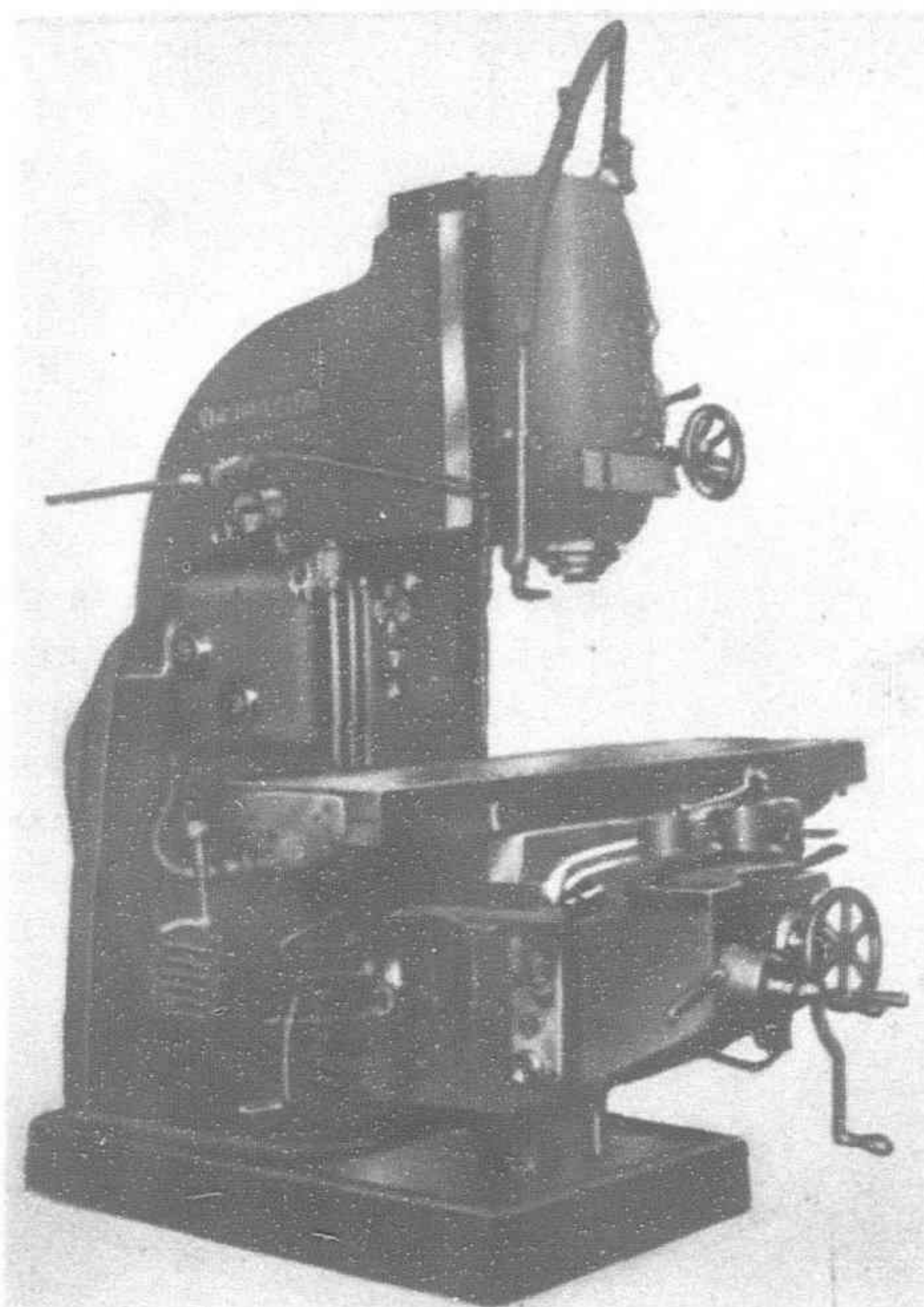
An article in the *Courrier d'Haiphong* says that a considerable effort has already been realized by the Siamese, and that their lines will shortly reach the Mekong and will drain towards Bangkok the export trade of Lower Laos and the region of Vientiane.

After his last visit to Saigon the Governor-General, M. Robin, travelled up through Laos on his way back to Hanoi, and arrived at Thakek on the 12th instant. There he conferred with the Résident-Supérieur and the Inspector of Customs on the question of maintaining the Customs system on the banks of the Mekong. This question, then, is presumably now receiving serious attention in the areas to become connected with railways. Customs duties are theoretically in force about half-way along the Mekong.—*The Bangkok Times*.

Use of Nickel Alloy Steel in Machine Building in Japan*

By Dr. MASAO KAMO, Professor, Tokyo Imperial University

VIEWED as a whole, the industries of Japan offer evidence that pure science and applied science are drawing closer to each other, and in the progress toward this promised union the use of nickel alloy steels is playing an important part. In the use of machinery, for example, the high degree of accuracy that once was demanded only in strictly limited fields is now essential as well to plants producing on a commercial basis.



The Main Spindle: Heat Treated No. 2 Nickel-Chromium Steel under the Standard Specifications of the Society of Mechanical Engineers of Japan made by the Tokyo Gas Denki Kogyo K.K. (Tokyo Gas and Electric Industry Co., Ltd.)

The aircraft industry is typical. Parts even down to small bolts must be made from tested material and themselves be tested after manufacture. Machines used for testing must obviously have a high degree of precision, as must also the machine tools with which the testing implements are made. To ensure long life for the machines and an unvarying standard of accuracy for their products, great care has been exercised in the selection of materials, and the nickel alloy steels, recommended for this use by the Society of Mechanical Engineers of Japan, are being used more and more for parts such as change gears, driving gears, back-gears, main spindles, main shafts

and tail spindles of machine tools, where high strength and hardness, resistance against wear and impact are required.

An airplane of the modern type cannot be constructed without resort to the use of nickel alloy steels. Japan's progress in the aircraft industry has been impressive. An air liner of the Douglas DC2 type—the first passenger transportation craft of such proportions to be used in this country—has been completed at the Ota plant of the K.K. Nakajima Hikoki Seisakusho (The Nakajima Aircraft Manufacturing Works, Ltd.), for regular passenger service between Tachiarai, Kyushu, and Taihoku, Formosa. Equipped with two 720 h.p. engines of American Wright Cyclone type, the plane accommodates fourteen passengers in addition to the pilot, a mechanic and a wireless operator.

The Automobile Industry

Although it is an industry highly important to Japan, the manufacture of automobiles was slow in developing, even after the passage in March, 1918, of the law providing a subsidy for motor-cars for military use. Lack of the proper materials

helped delay the industry's growth, but since nickel alloy steels became available the production of automobiles has increased and the demand has grown, especially for trucks. Passenger cars, as for many years past, are still made chiefly from parts supplied from the United States of America. The total potential capacity of automobile manufacturing companies and companies producing them as a side-line in Japan has increased to an estimated 30,000 cars per year, and with both the Government and private concerns interested, the motor-car industry in this country promises to become established eventually on a firm basis. The "Sumida" and "Chiyoda," two subsidized cars, have been greatly improved in design and construction.

The Ministry of Commerce and Industry has issued standard specifications for nickel alloy steels used in automobile manufacture. These include four kinds of nickel steel, containing from 1.0 to 4.5 per cent of nickel; and four kinds of nickel-chromium steels, containing one to five per cent of nickel and 0.30 to 2.0 per cent of chromium. These are used in the manufacture of the Isuzu and other cars.

Automobile manufacturers in America, Europe and Japan are all indebted to nickel alloy steels for the development of the industry, for these steels alone seem able to function properly over long periods under the severe conditions demanded of each independent automobile part.

Nickel Steels in Diesel Engines

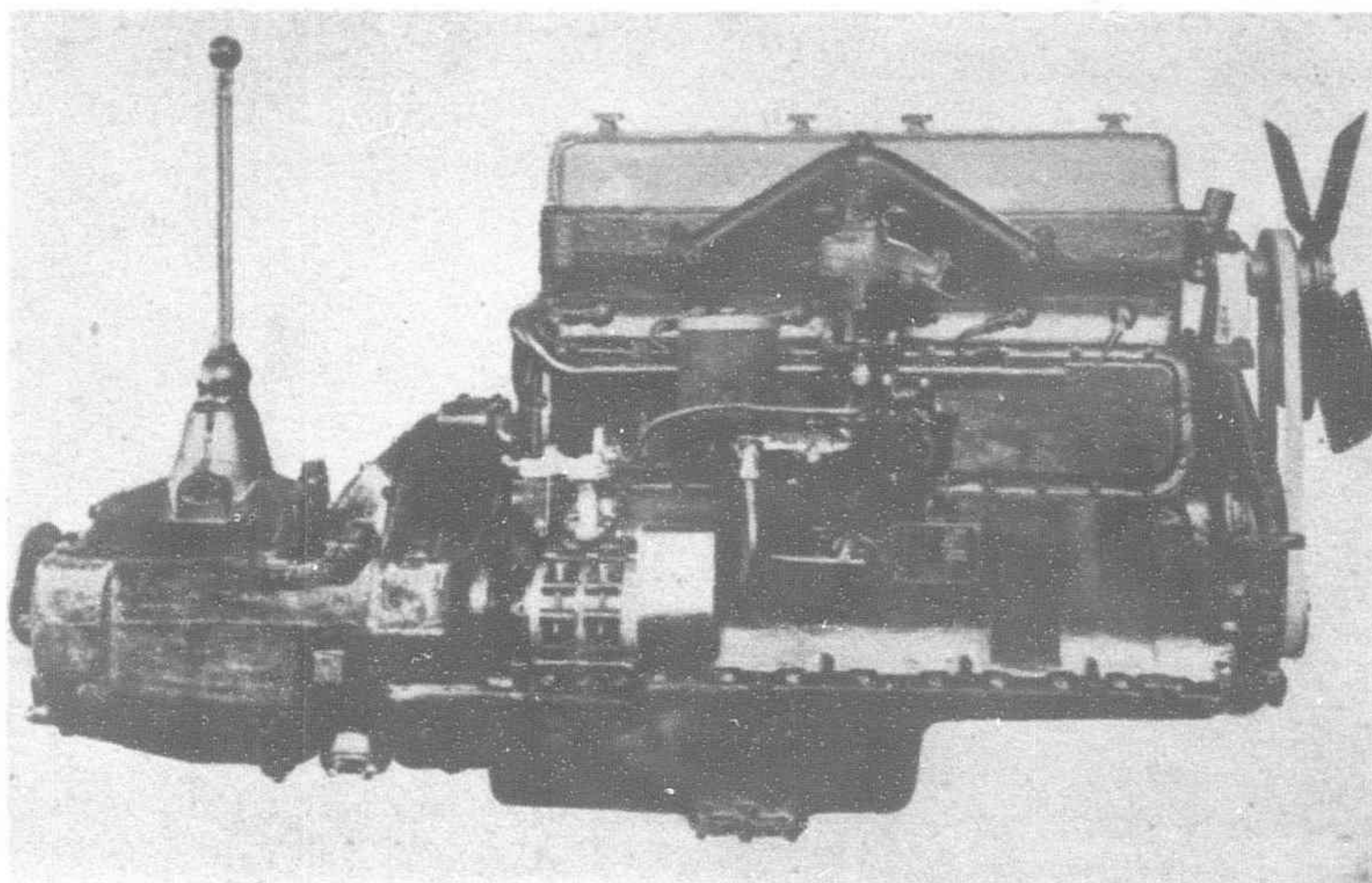
Diesel engines for land and sea are being manufactured and

operated in Japan in considerable numbers. Ashore they drive electric power plants, railway services, cranes and agricultural machinery; aloft they are used in aircraft, and afloat they power all types of vessel from the fishing boat to the ocean-going liner.

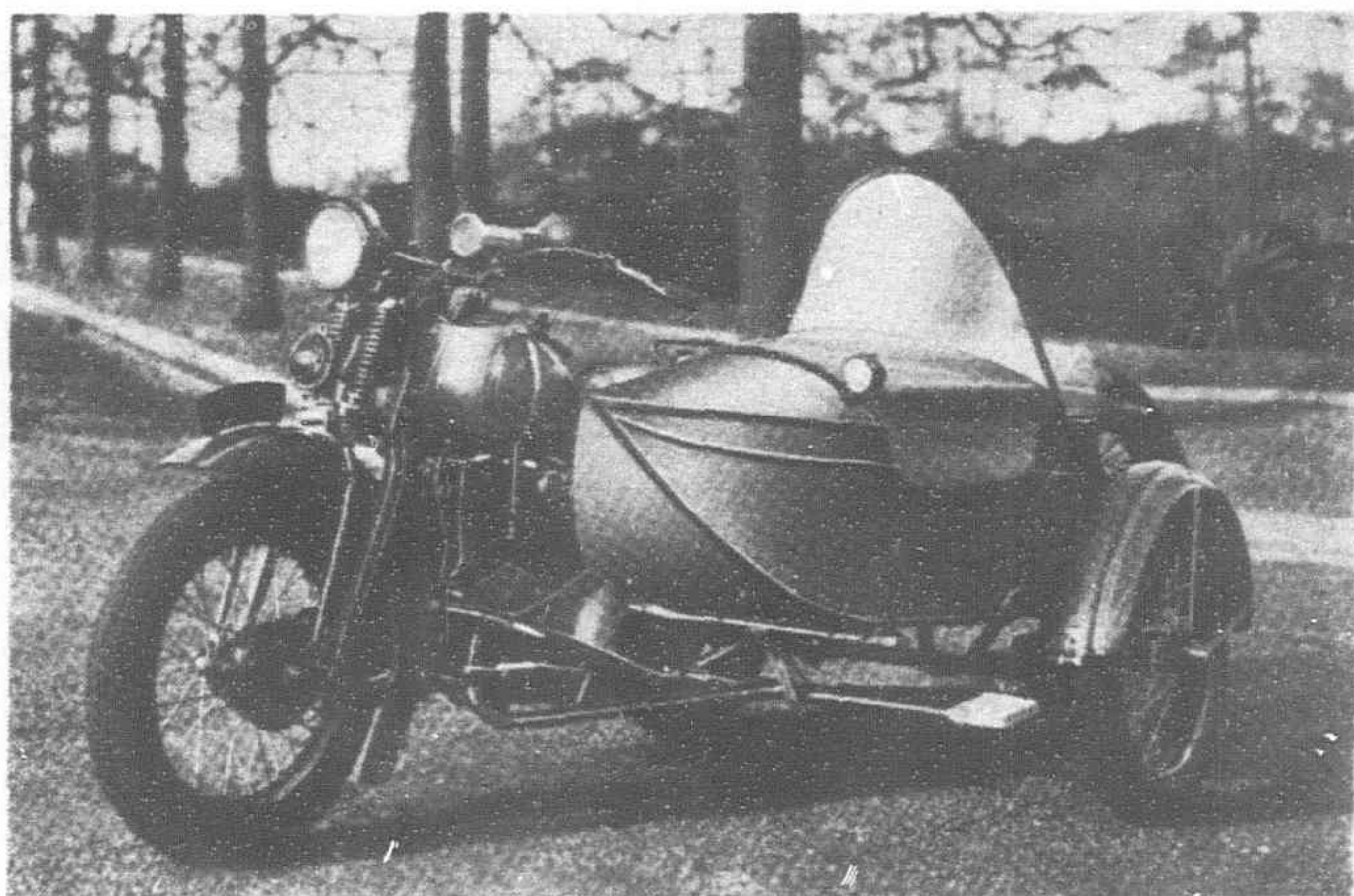
The Diesel engine has been consistently selected for the superior-size ships constructed under special regulations of the Communications Ministry, a few typical examples of which follow:—

Tatekawa Maru, 9,000 h.p.; *Toa Maru*, *Kyokuto Maru* and *Kongo Maru*, 8,000 h.p.; *Komaki Maru*, *Shikano Maru* and *Kiyozumi Maru*, 7,600 h.p.; *Adzumas-san Maru*, *Amagisan Maru*,

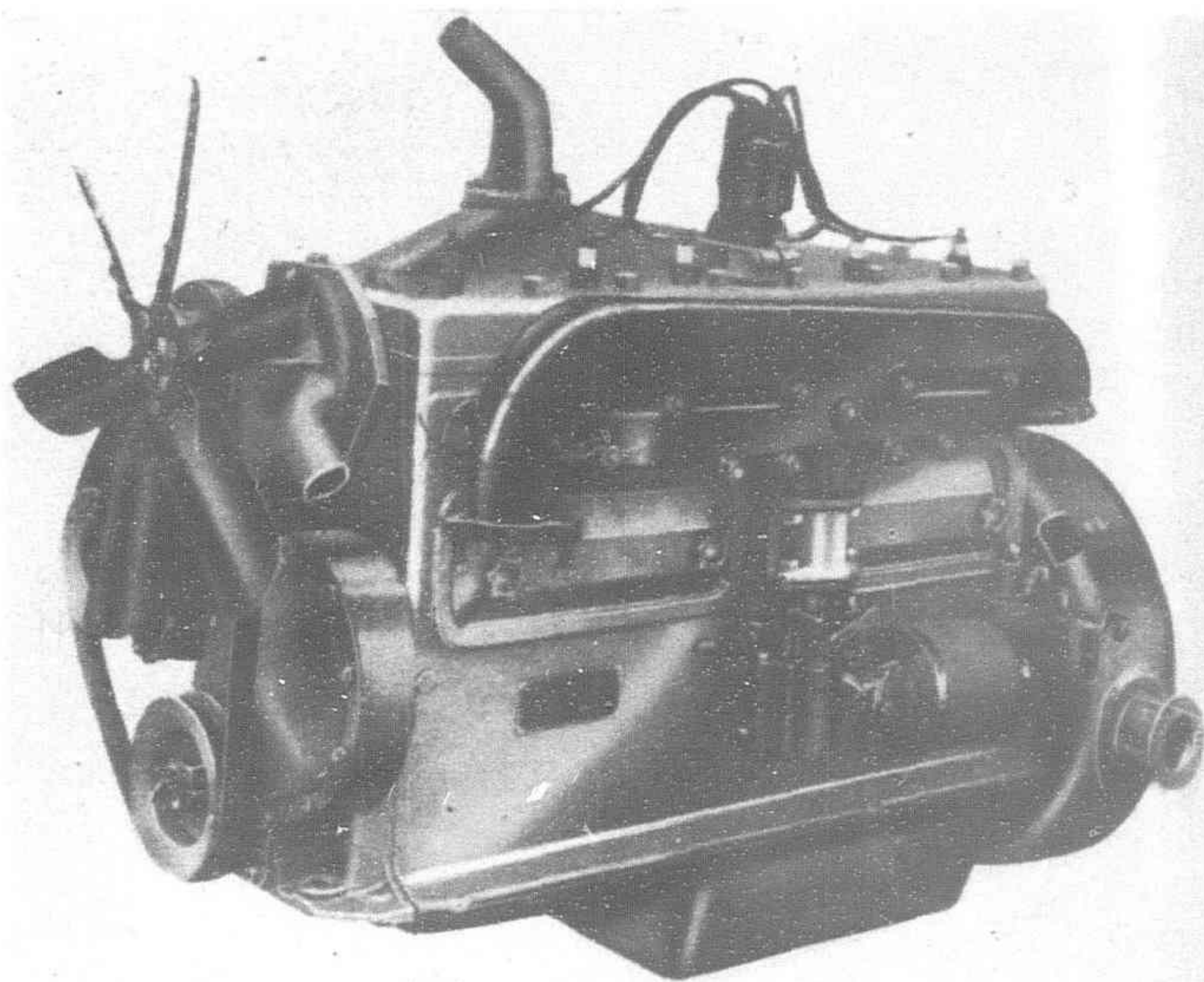
*Japan Nickel Review.



"TU-6" Type Gasoline Engine made by the Mitsubishi Jukogyo K.K. Kobe Zosenjo (Kobe Dockyard of the Mitsubishi Heavy Industry Co., Ltd.)



Front view "Kurogane" Side Car with 1,200 c.c. J.A.C. Engine made by the Nippon Nainenki K.K. (Japan Internal Combustion Engine Co., Ltd.)



The Isuzu Engine made by the Tokyo Gas Denki Kogyo K.K. (Tokyo Gas and Electric Industry Co., Ltd.)

Asosan Maru and *Aoba Maru*, 7,000 h.p. and *Nagara Maru*, *Nako Maru* and *Naruto Maru*, 6,700 h.p.

Nickel alloy steels are used in the Diesel engine for the piston rod, connecting rod, crankshaft, fuel valve, flywheel, pump body and cam shaft of fuel pump, blower impeller, exhaust valve, suction valve, cooling pipe for exhaust valve, cam, cam shaft and cam roller, timing gear and valve rocker.

The Locomotive Industry

After supplying its own needs for many years, Japan has become an exporter of railway locomotives, manufacturers here having received an order from the Government of Siam in January, 1936, for eight steam locomotives in addition to several hundred passenger and freight cars.

An example of economical application of nickel alloy steels is furnished by the Pacina type streamlined locomotive which hauls the super-express train "Asia" between Hsinking and Dairen.

Built by the Kawasaki Sharyo K.K. (Kawasaki Car Co., Ltd.) for the South Manchuria Railway Co., this type was designed to cover the 700 kilometers between the two cities in $8\frac{1}{2}$ hours, averaging about 82 kilometers per hour. However, to give this performance the locomotive's weight could not be increased, because of the effect it would have on steel rails, bridges and other equipment.

The manufacturers followed a new design, but kept the weight within necessary limits by using special materials. A 2.25 per cent nickel steel plate was used for the boiler shell, and this alone

effected an estimated saving of two tons compared with carbon steel plate.

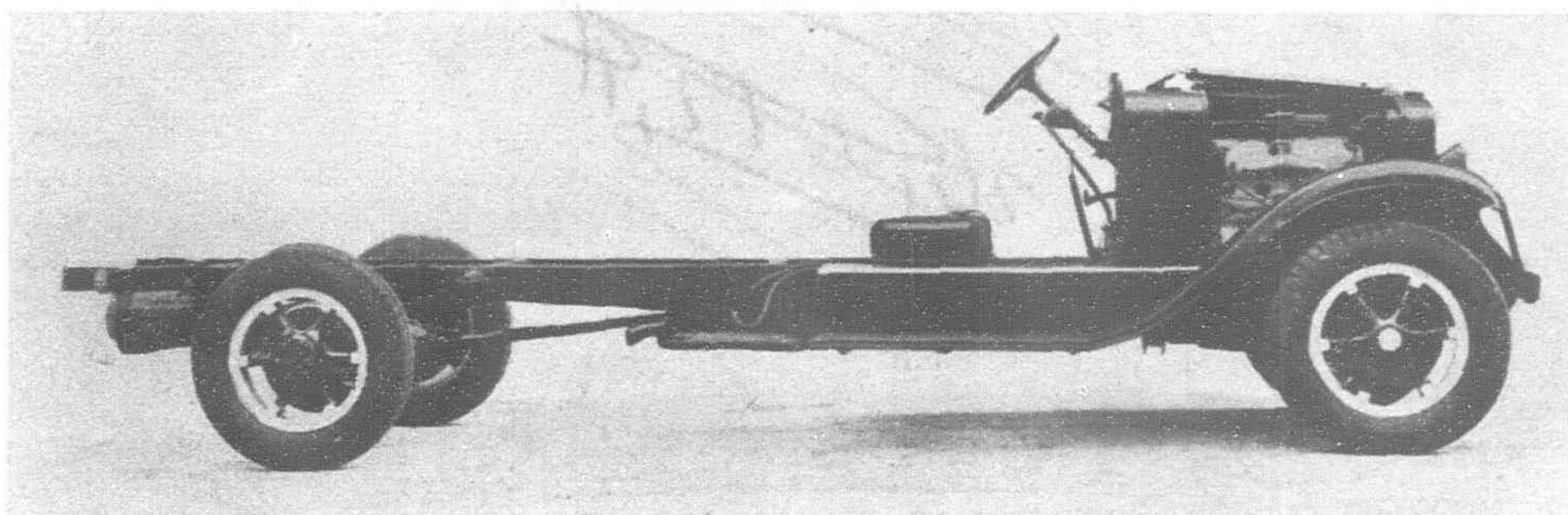
In the Mikashi type locomotive, also manufactured by the Kawasaki Sharyo K.K., nickel steel plate is used for the shell. This type weighs 116 tons, about nine tons lighter than the Pacina, and through careful selection of materials its normal working steam pressure has been increased from 15.5 to 17 kg/cm².

High Speed Prime Movers

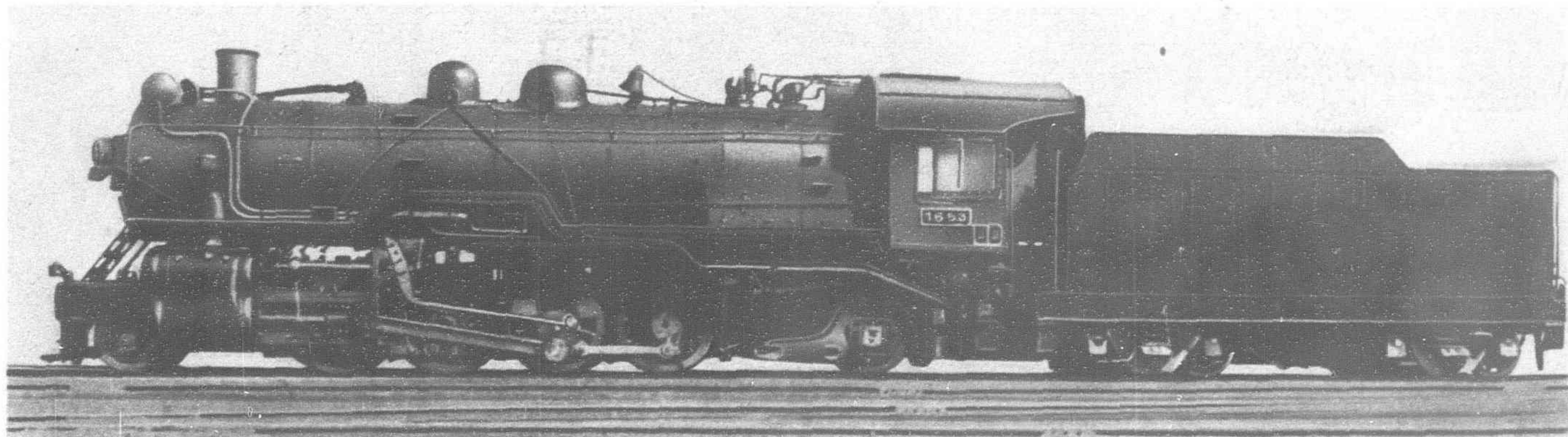
Development of industries in general has automatically increased the consumption of electricity, to supply which, Japanese manufacturers are turning out large-type turbo-generators. The Shibaura Seisakujo (Shibaura Engineering Works, Ltd.) manufactured a high speed generator of 22,500 kva

by 3,600 r.p.m., for use at the Electric Bureau's Ube No. 2 power station in Yamaguchi Prefecture. Generators of such size with a 3,600 r.p.m. speed are used in America, but are not to be found at all in Europe. The rotor shaft of this generator, made of nickel steel, is a product of the Nihon Seikojo (Japan Steel Works), where it was forged in one piece, with a maximum tensile strength of 70 kg/mm².

Other high speed generators include that of 37,500 kva by 3,000 r.p.m., of the Nihon Seitetsu K.K. (Japan Iron Mfg. Co., Ltd.) and one of 25,000 kva by 3,600 r.p.m., of the Daido Denryoku



Truck Chassis equipped with 445 AD Type Diesel Engine, made by the Mitsubishi Jukogyo K.K. Tokyo Kikai Seisakusho (The Tokyo Arms and Machinery Works of the Mitsubishi Heavy Industry Co., Ltd.)



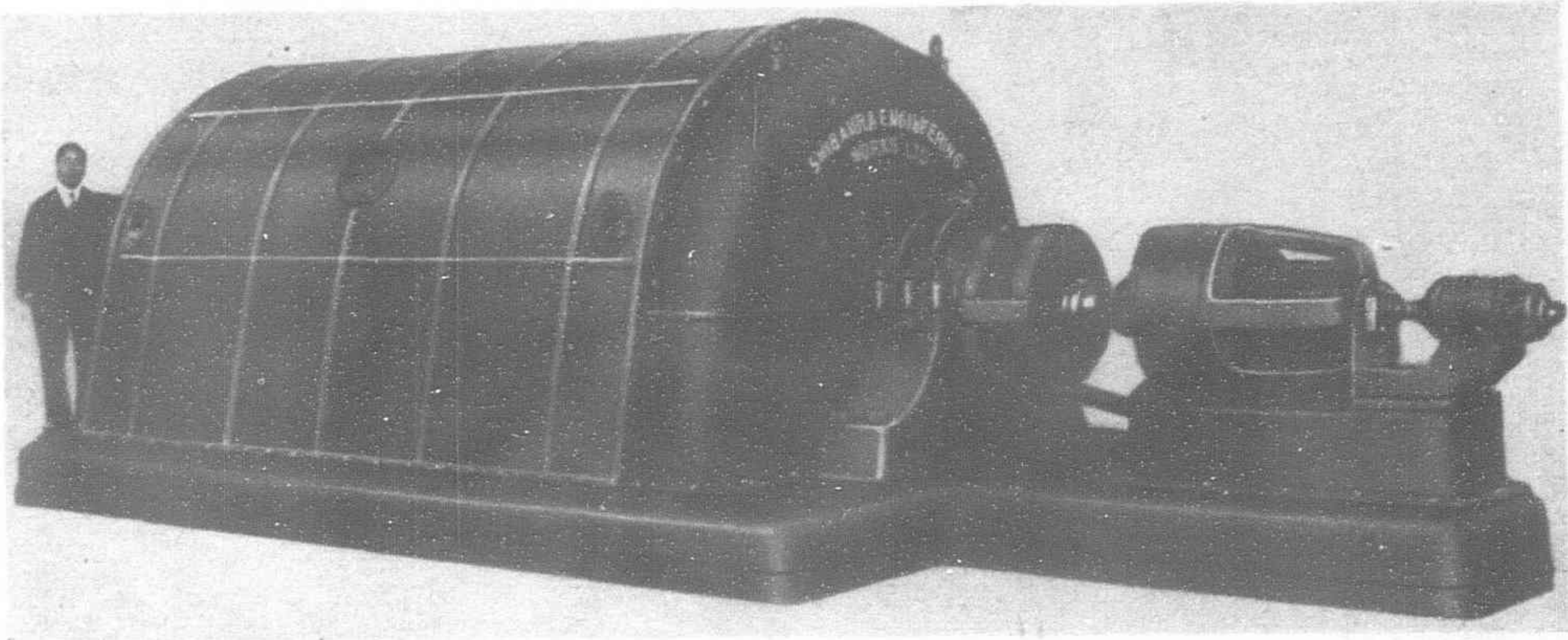
"Mikashi" type locomotive for the South Manchuria Railway Co. made by the Kawasaki Sharyo K.K. (Kawasaki Car Co., Ltd.)

K.K. (Daido Electric Power Co., Ltd.), made by the Hitachi Seisakusho (Hitachi, Ltd.). Nickel-chromium-molybdenum steel was used for the rotor shafts of the built up type of both generators to reduce weight, and nickel-manganese steel of austenitic structure was used for the end plates of the stators, in order to reduce stray loss.

A turbo-generator of 26,200 kw., also with a speed of 3,600 r.p.m., has been made by the Mitsubishi Jukogyo K.K. (Mitsubishi Heavy Industry Co., Ltd.) and delivered to the Hiroshima Denki K.K. (Hiroshima Electric Power Co., Ltd.). It is understood that high speed was desired in this case chiefly to minimize steam consumption and to reduce expansion and contraction of the turbine due to high temperature and high pressure of the steam used.

Economy in Generators

Greater strength with lighter materials is important in the generator, because of the economies effected in manufacturing costs, freight and installation expenses. Manufacturers have recognized this, of course, but they were long restricted by the limits of strength and reliability of available material for the rotor, and as a result generator designing did not improve as fast as turbine designing. The advance of metallurgy, however, has made available special steels for the rotor that have

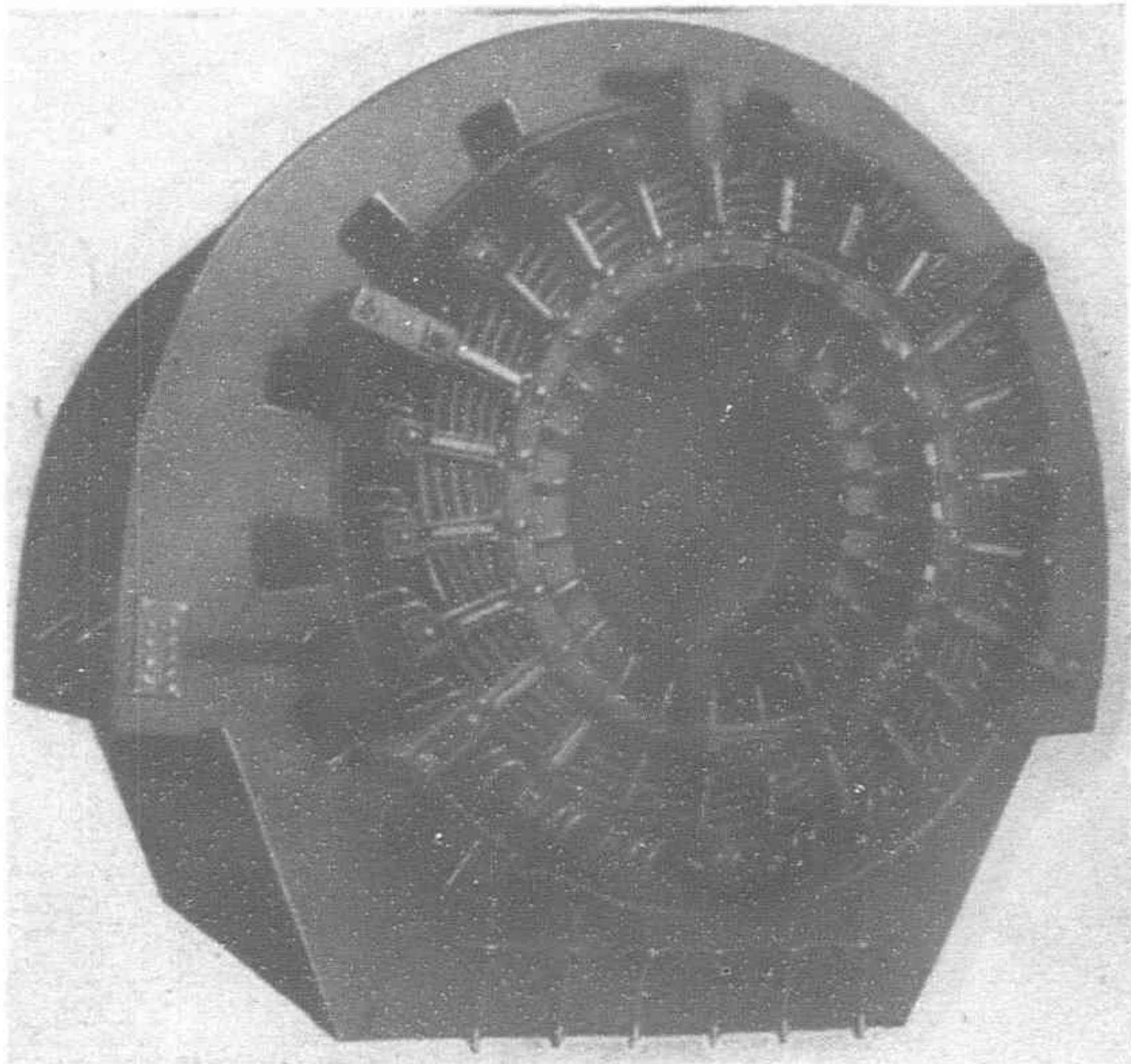


Turbo Generator of 22,500 kva 3,600 r.p.m. made by the Shibaura Seisakujo (The Shibaura Engineering Works)

brought about remarkable improvement, and added efficiency has been attained in designing and manufacturing technique through the detailed study of the individual parts of machines. The Mitsubishi Jukogyo K.K., is now able to build single generator units up to 35,000 kw. with a speed of 3,600 r.p.m.

Some of the advantages of the higher speed generator are shown by the following comparison:—

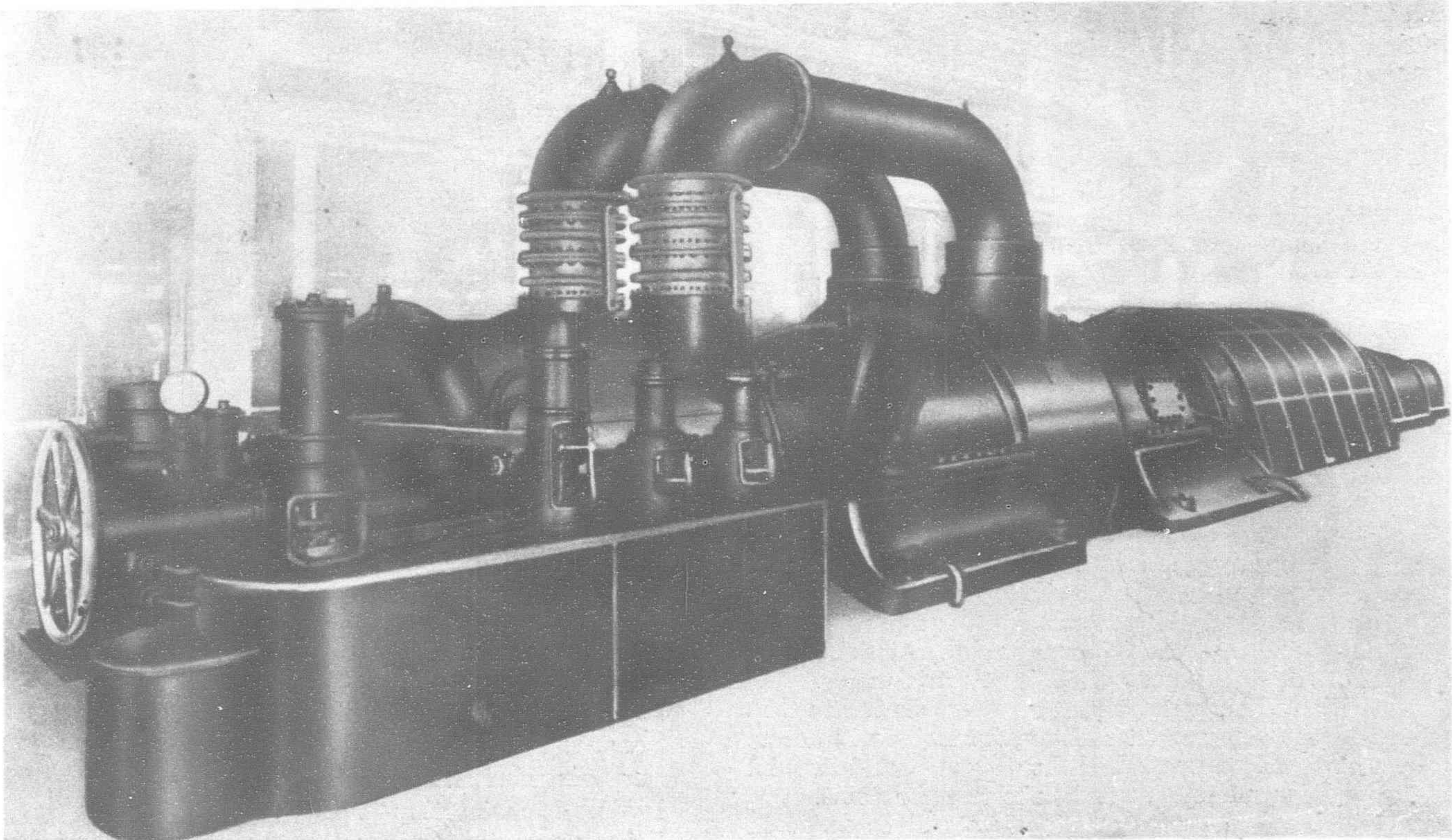
R.m.p.	..	..	1,800	3,600
Capacity (kva)	..	..	31,200	31,250
Ratio of Total Weight	..	1		0.67
Ratio of Weight of Stator	1			0.84
Ratio of Weight of Rotor	1			0.43
Ratio of Floor Space	..	1		0.86
Ratio of Height	..	1		0.73
Ratio of Efficiency	..	1		1.01



Stator for 25,000 kva 3,600 r.p.m. 11,000-v. Hitachi Turbo Generator

Steam Turbines

Nickel-chromium steels or nickel-chromium-molybdenum steels are used for the disc wheels of steam turbines built for electric power plants by the Mitsubishi Jukogyo K.K., the Ishikawajima Zosenjo K.K. (Ishikawajima Ship Building Co., Ltd.) and the Hitachi Seisakujo (Hitachi, Ltd.). The turbine blades are made of



26,200 kw. Turbo Generator used by the Hiroshima Denki K.K. (The Hiroshima Electric Co., Ltd.) manufactured by the Nagasaki Zosenjo of the Mitsubishi Jukogyo K.K. and the Nagasaki Seisakujo of the Mitsubishi Denki K.K. (The Nagasaki Dockyard of the Mitsubishi Heavy Industry Co., Ltd. and the Nagasaki Manufactory of the Mitsubishi Electrical Industry Co., Ltd.)

forged and machined 18/8 stainless steel, and among other uses of nickel alloy steels are :

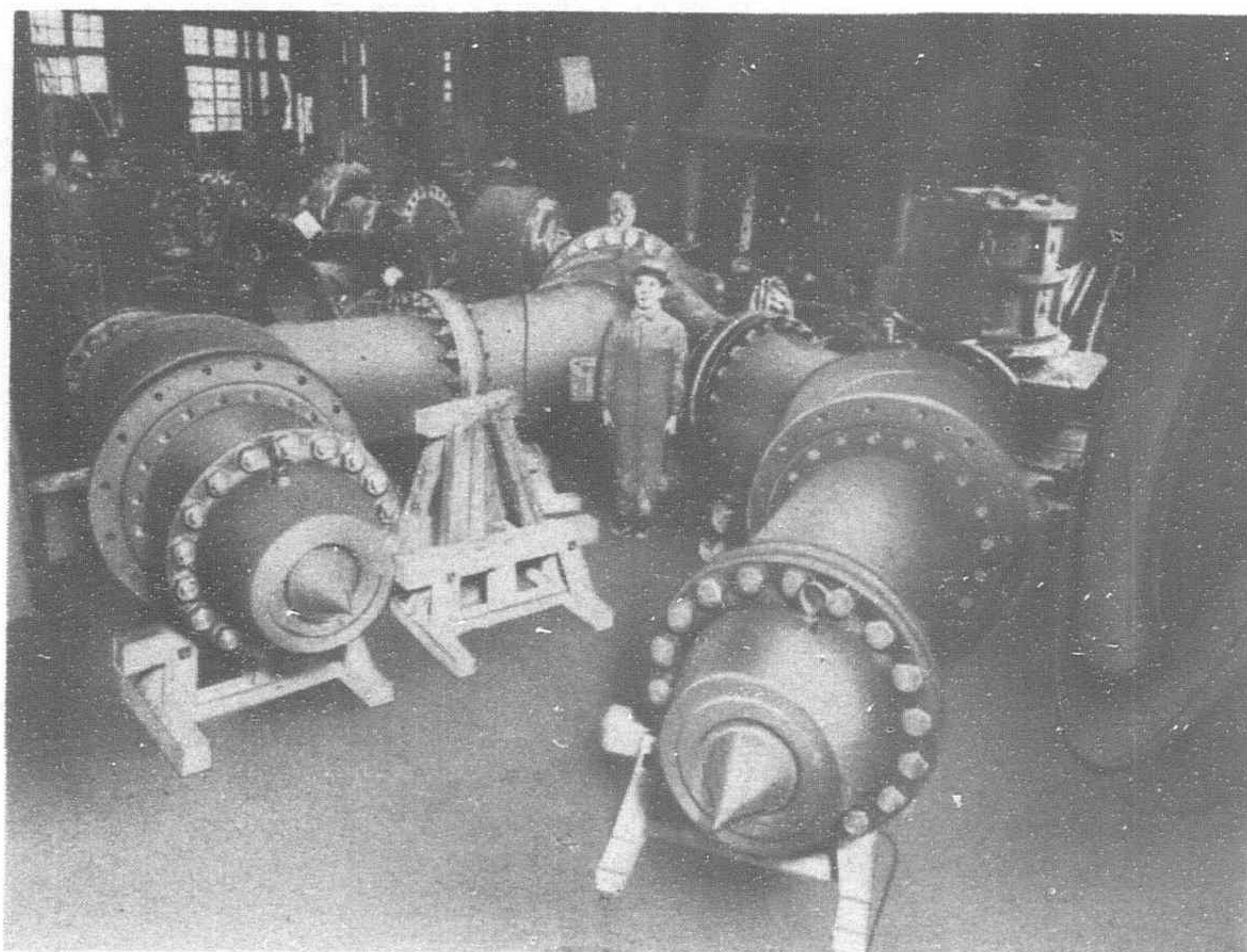
- 18/8 stainless steel or nickel steel for bolts exposed to high pressure steam ;
- Nickel steel for nozzles ;
- Nickel-molybdenum steel or stainless steel for valves.

Hydraulic Power

Water wheels are also extensively used, the largest in the Empire reputedly being the Pelton wheels of the Choshinko Suiryoku Denki K.K. (Choshinko Hydro-Electric Co., Ltd.), of 52,300 h.p., which were built in three sets by the Dengyosha Gendoki Seizosho (Dengyosha Prime Mover Works, Ltd.). The same company has built three other sets of water wheels of 35,000 h.p. each for the Nihon Denryoku K.K. (Japan Electric Power Co., Ltd.) three 32,000 h.p. sets for the Oigawa Denryoku K.K. (Oigawa Electric Power Co., Ltd.) and four 25,000 h.p. sets for the Yahagi Suiryoku Denki K.K. (Yahagi Hydro-Electric Power Co., Ltd.). In all these water wheels nickel-chromium steel is used for nozzles and needle valves.

Chemical Industry

Stainless steel of the 18/8 type is being widely applied to machine construction and equipment in the chemical industry of



The Nozzles and Needle Valves of Nickel-Chromium Steel in water wheels of 52,300 h.p. made by the Dengyosha Gendoki Seizosho (Dengyosha Prime Mover Works, Ltd.)

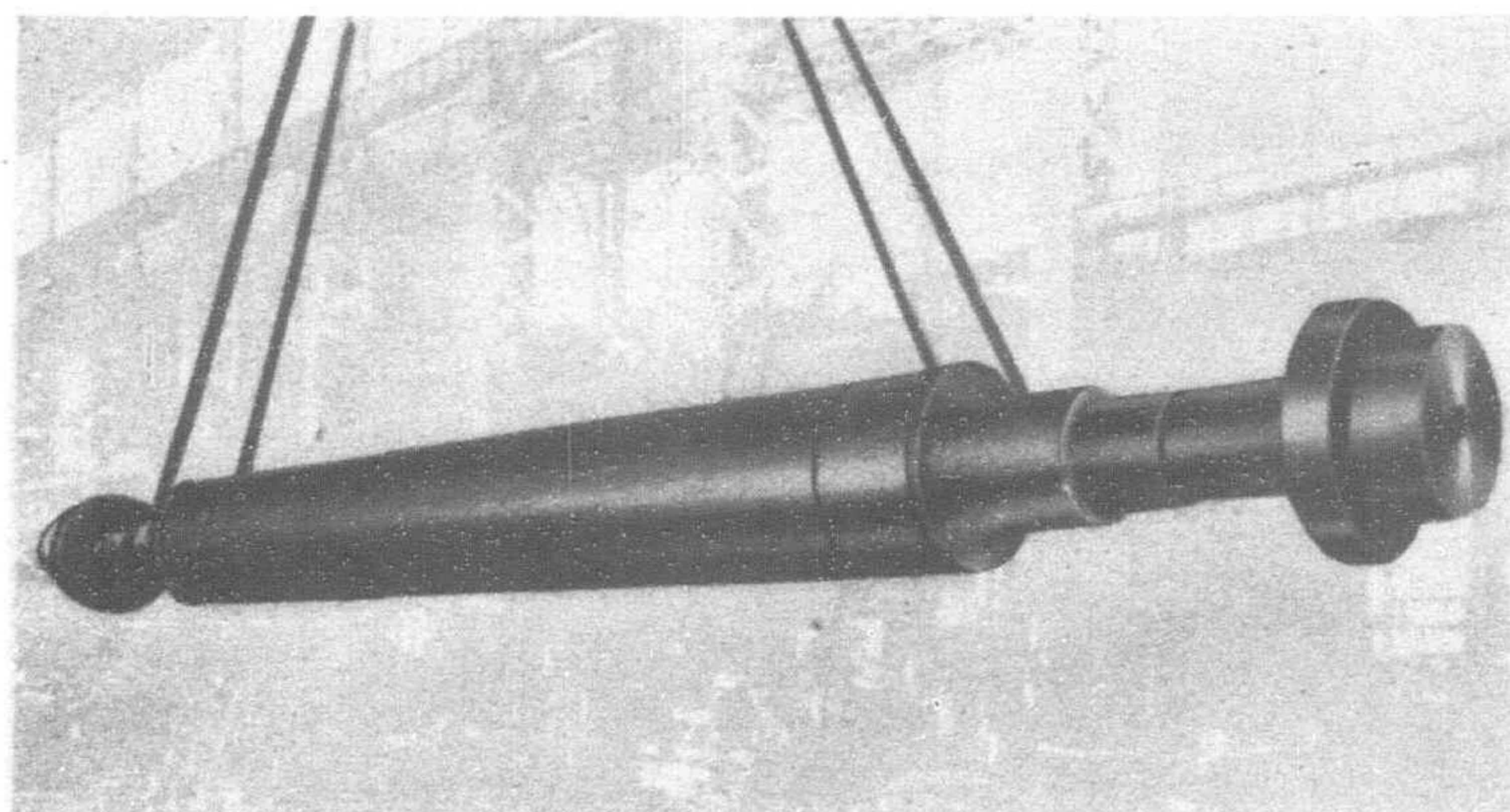
Japan, especially in the manufacture of explosives, celluloid, rayon, etc., where it is used in piping, valves, pumps, condensers, containers for nitric acid and filter cloth.

Conclusion

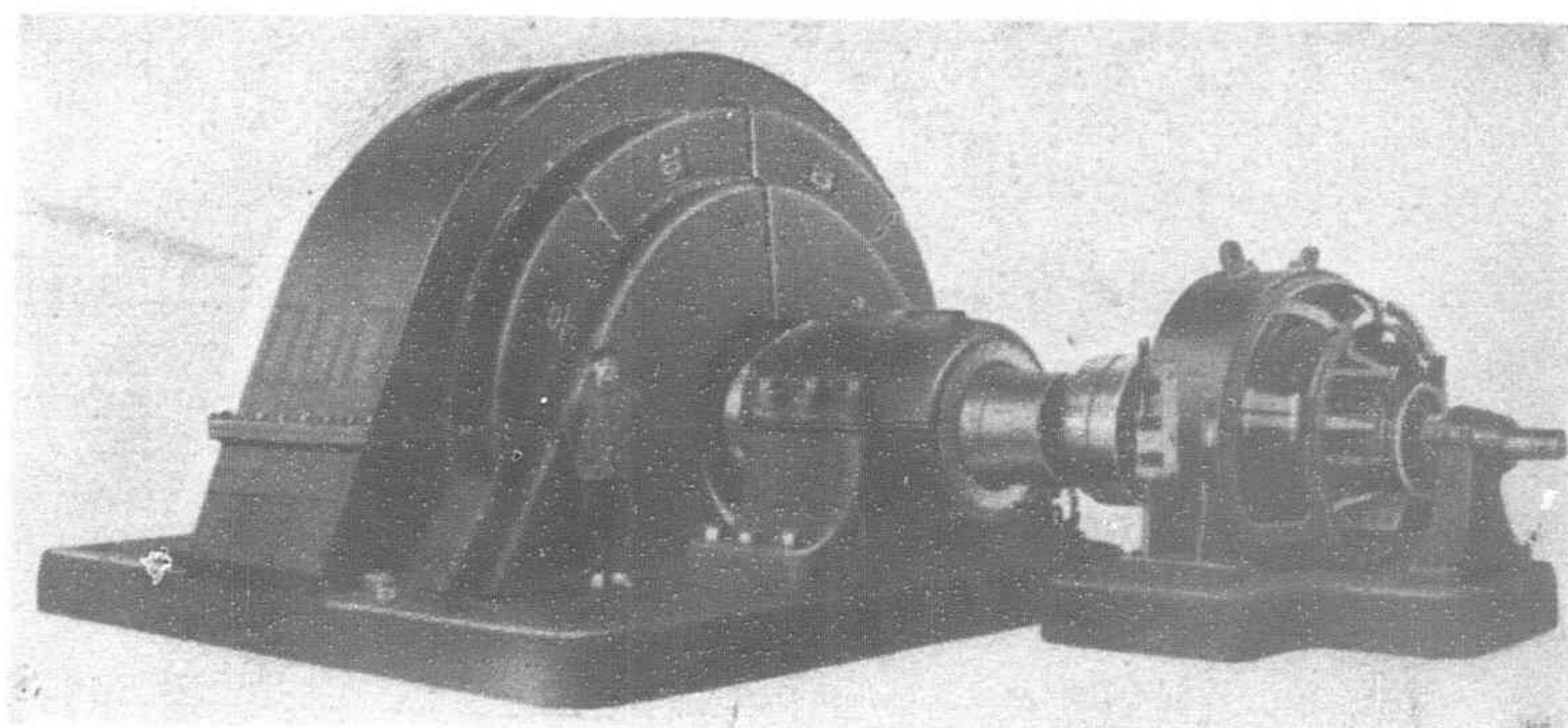
Toughness, the special feature of nickel steel, and toughness combined with strength, which characterizes nickel-chromium steel, are properties making both steels vital factors in the construction of machinery. But it is more important than ever before for both the users and builders of machines to study closely the steel materials used in their plants and products. A certain electric power plant in this country was experiencing trouble recently due to the repeated failure of bolts in a steam turbine. A check

revealed that they were not made of nickel steels, as had been specified. This incident illustrates only in part the care which the modern engineer must use in selecting proper materials. Even had the bolts which broke been made of the nickel steels specified, their failure might have been due to improper composition or faulty heat treatment.

Thus the selection of materials is a high responsibility, but through the application of the proper steels in the proper places failure can be eliminated and long life and accuracy can be given to the machine.



Rotor shaft for 25,000 kva 3,600 r.p.m. Hitachi Turbo Generator before finishing work



General view of 40,000 kva. Electric Generator, made by the Shibaura Seisakujo (Shibaura Engineering Works). The Rotor Shaft is made of forged Nickel-Chromium Steel. The Generator is to be driven by the 52,300 h.p. water wheel mentioned in this article

Osaka-Nagoya Electric System

Capitalized at Y.8,160,000, the proposed new Kansai Kyuko electric railway will build its main line from Kuwana-machi in Mie prefecture to Nagoya. The laying of the tracks for this 23.9 kilometer road will begin shortly and is to be completed in 1937.

According to present plans, the new Kankyu line will make connections with the Ise-Den. The Ise-Den will amalgamate with the Sankyu Dentetsu and thus the 200 or more kilometers between Osaka and Nagoya will soon be traversed by electric trains.

Since the new line will adopt a 3-ft. 6-in. gauge similar to that of the Ise-Den and the government railway, its trains will not be able to run over the Sankyu line, which has a gauge of 4-ft. 2-in. Tsu, the capital of Mie prefecture, will be the transfer point.

The tram trip between Osaka and Nagoya will be made in about two hours and a half, which will be faster than the same trip by express over the Tokaido or Kansai lines, with the added advantage that an express ticket will not be necessary, while the journey will be free of engine smoke and soot.

Conservancy in China

Nanking reports that \$4,942,828 will be expended on national water conservancy enterprises during the current fiscal year. The various projects include :—

	Dollars
Irrigation engineering	1,043,664
Readjustment of river traffic services	516,500
Dredging rivers	478,787
Repair and construction of dykes and sluices	1,213,361
Surveying watercourses	491,335
Surveying currents	75,933
Hydraulic engineering	94,900
Other enterprises	325,520
Administrative expenses	270,000
Subsidizing engineering work of Yungtingho	870,408
Fixed business expenses	435,420

Nickel Coinage in Japan

By Dr. TSUGUO HIROSE, Technical Director of the Imperial Mint, Osaka

PSYCHOLOGICALLY the old Samurai's attitude toward his sword of nickel-bearing meteoric iron, and the modern aviator's attitude toward his airplane of nickel steel are one and the same: each trusts his life to the nickel in the material. In point of mechanical construction there is a vast difference, of course, between the simple weapon and the complex flying machine, yet nickel is highly important to both these instruments of two different ages.

Nickel has a fairly brief history, the first known written record about it dating from the early 14th century, when ore containing nickel, copper and other elements was discovered in Saxony. Its promising glitter aroused high hopes, but innumerable attempts to refine it, entailing heavy loss of money and effort, all proved futile. The ordinary method used for copper failed to refine the ore because it contained nickel.

The chagrined German miners named the ore "kupfernickel," or "copper-demon," possibly recollecting tales of Old Nick (the devil) who deluded miners in their search for metals. "Kupfernickel" later became an object of study by scientists, but the name given it by the ignorant miners survives in several languages.

The 14th century by no means marked the first service of nickel to mankind, as it had been used for centuries as a constituent of various instruments although probably unconsciously as in the case of the swords of the Samurai. In the possession of the British Museum is a Bactrian coin, authenticated as having been cast in the year 235 B.C., made of Pakfong, an alloy composed of nickel, copper and zinc. In the territory where the ancient Kingdom of Bactria existed no nickel is found, so the metal of which the coin is made must have come from a considerable distance. As Bactria was in caravan communication with the Far East, it has been conjectured that Pakfong was brought from China, where it is believed to have been refined from ore mined in Yunnan Province. But no proof exists for this conjecture.

European scientists were more successful than the miners in dealing with the mysterious Saxon ore, and in 1751 Cronstedt, a Swedish investigator, succeeded in separating the element nickel. Confirmation of his discovery, accomplished by Bergmann, did not come until 25 years later. In 1804, or 53 years afterwards, Richter made the first pure nickel ingot and published the results of his study.

Thus nickel is a mere infant among the metals when compared with gold, silver, copper, iron and others. But younger still is nickel alloy, for it was not until 1826 that metallurgy discovered how to alloy nickel with zinc and produce the beautiful and easily workable metal known as German silver. There was a wide demand for the alloy, which is still used the world over for table utensils and in other forms.

Belgium was the first country to adopt nickel for coinage, issuing in 1860 a coin composed of 75 per cent copper and 25 per cent nickel, the same proportions used for present-day cupro-nickel money. America followed suit in 1865, Germany in 1873 and Switzerland in 1879. Pure nickel coinage was inaugurated by Switzerland in 1881 and taken up by more than twenty other nations. In none of these countries, however, is the complete process of producing pure nickel coins performed at the mint. Local factories supply blank nickel discs, made to specification, and the mint does no more than stamp the coins.

Japan circulated its first pure nickel coins in October of 1933, more than half a century after Switzerland, but with a departure from existing practice in that the full process of manufacture takes place at the Imperial Japanese Mint. Instead of ordering the blank discs, the Mint imports nickel pellets and electrolytic nickel which is melted, cast into ingots and subjected to rolling again and again until the metal reaches the specified coin thickness. Blank coins are stamped from these sheets. The process is both laborious and difficult, which is the reason why the mints of other countries avoid it.

We at the Mint fully realized that we were risking criticism for rashness in making the attempt, but we decided to do so anyway

because of economic and other considerations. We undertook the task with determination and fortunately have succeeded even better than we had anticipated.

Seniors and friends felt misgivings over the project and some even warned us, but once the experiment was actually begun they extended every assistance. Mr. James A. Rabbitt of the Japan Nickel Information Bureau kindly supplied all available information about processes in America and Europe, for which we were highly appreciative. The process was an extremely difficult one, and the near approach of the date for circulating the new coins was an added handicap.

The Melting Process

The melting point of nickel, 1452°C, is far above that of gold, silver, cupro-nickel or bronze, with which the Mint had previously worked, so the type of furnace then in use was unsuitable. Nor could a graphite crucible be used, as even the slightest carbon contamination causes brittleness and makes the rolling of nickel impossible.

Furnaces fired by coal, coke, gas and crude oil give rise to difficulties in selecting crucibles and demand too much time for the melting of nickel, so only the electric type was left. The arc furnace is liable to introduce carbon into the metal, and the electric resistance furnace has too low a temperature range, so our choice was the electric induction furnace. We finally ordered the American Ajax-Northrup high frequency induction type as manufactured by the Shibaura Seisakusho (Shibaura Engineering Works). The manufacturers had turned out a few sets of these furnaces for steel melting, but none for melting nickel, so trial and experiment in using them were necessary. Eight furnaces were delivered to the Mint in June and their installation was completed in August, just two months before the date for delivery of the coins.

Lining for the furnace, which must not contain any carbon, and the shape and size of the molds were early questions to be solved. The size of the molds had been considered in fixing the capacity of the furnace, as there is a close relationship between the two. If a furnace's capacity is big the molds must be correspondingly large because if they are too small more time is required for pouring. The charge of a furnace should be sufficient for two or three molds.

After careful study, furnace capacity had been fixed at 150 kg. and the size of the mold at 50 kg. Four furnaces were worked daily while four were being relined. Each furnace was charged with 120 kg. requiring approximately thirty minutes for melting, so that with twelve working hours a day sixteen charges could be melted.

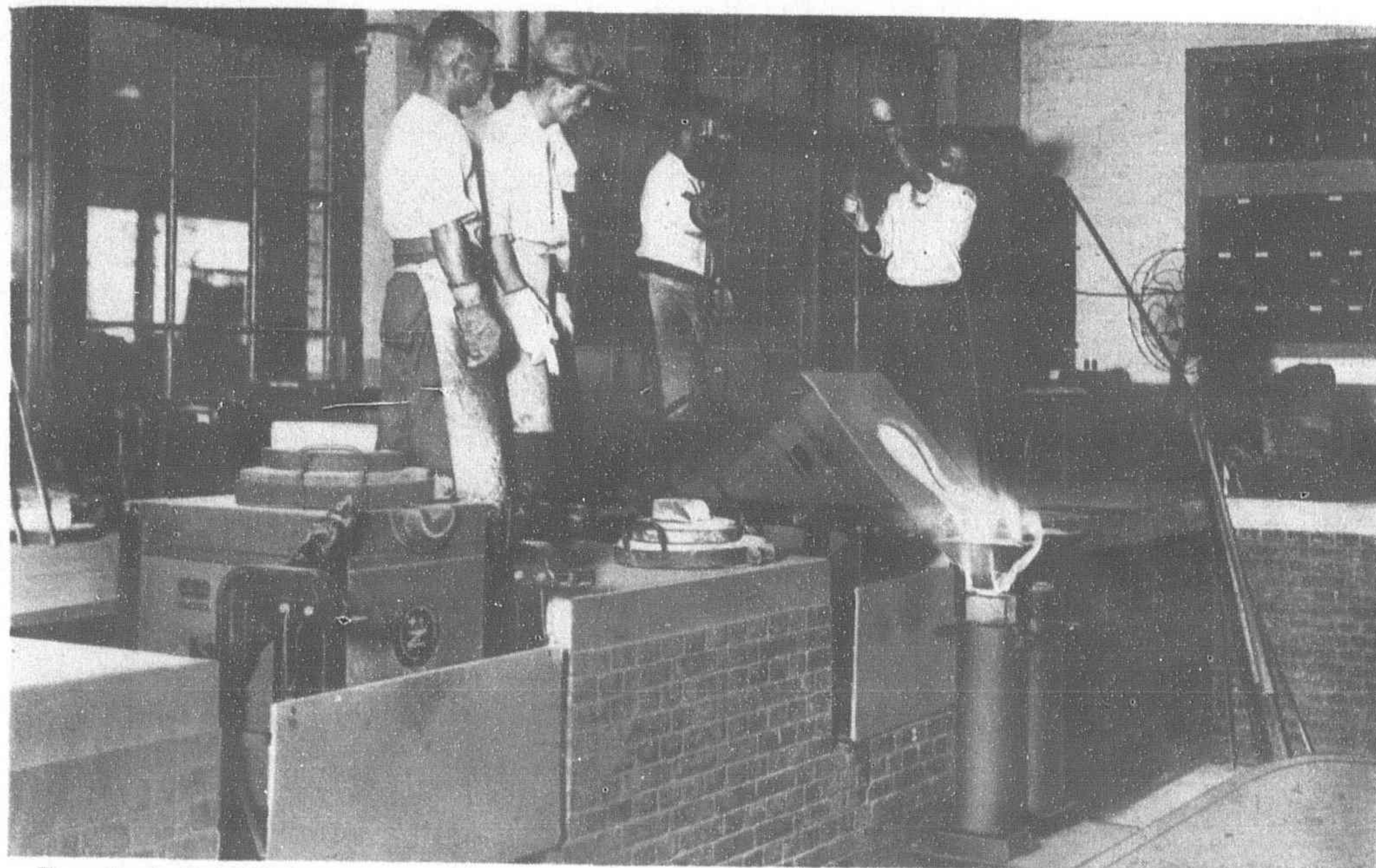
Approximately 7,000 kg. of nickel was melted daily, of which only 2,000 kg. was new metal and the remaining 5,000 kg. was scrap. Melting such impure metal caused considerable difficulty because ingots obtained from it were likely to be brittle due to insufficient deoxidation. These had to go into the following charge, delaying the melting. Despite the time required for its recovery, not even a small amount of the scrap can be thrown away due to the high cost of the material.

Another problem at the beginning was the coating for the interior of the molds, upon the quality of which the life of the mold depends. We selected this and the lining for the furnaces after research in our own melting shop and now obtain 100 to 130 castings from the molds.

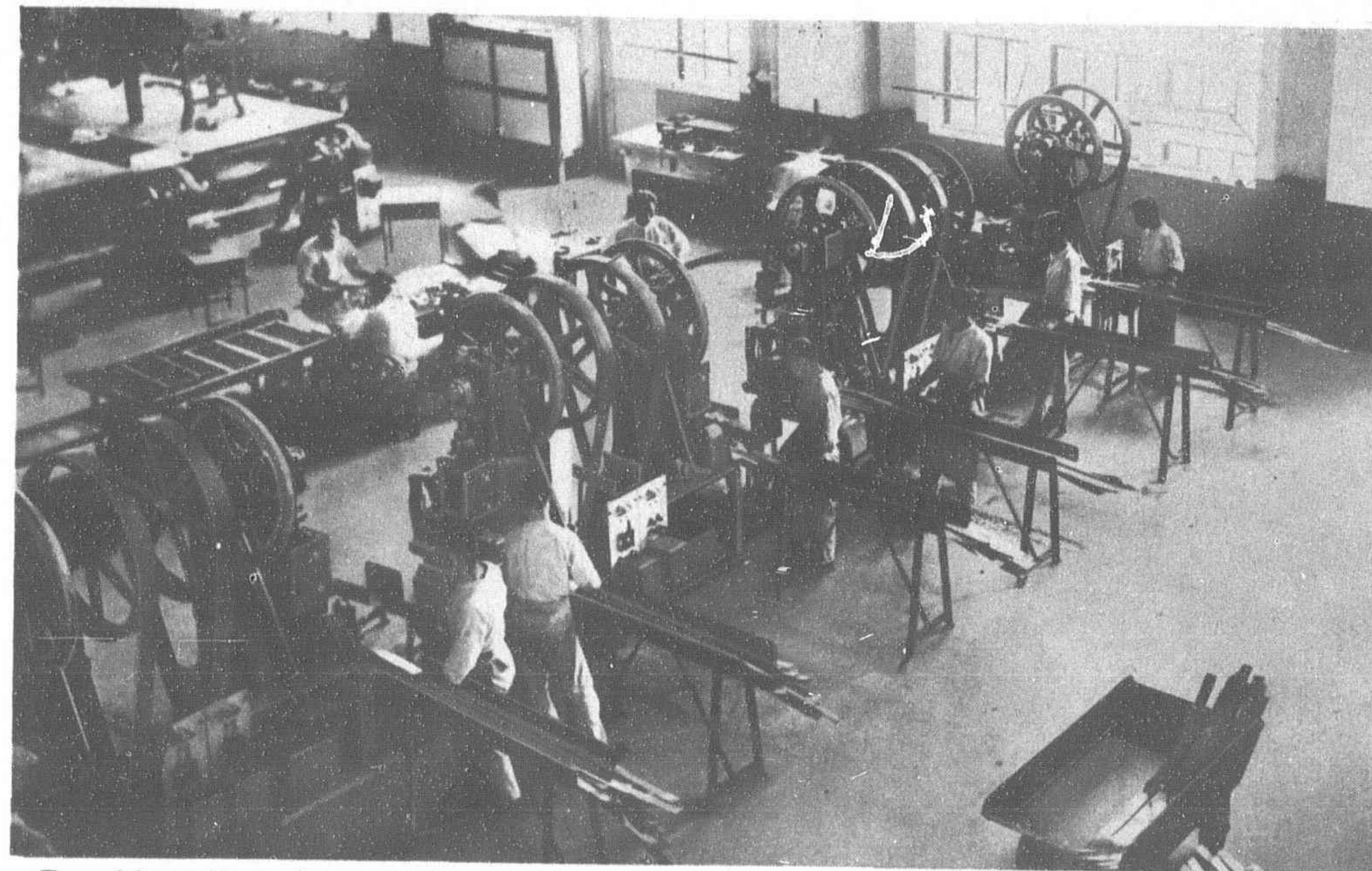
Rolling the Ingots

Rolling of the ingots was a section of the work which I took up personally. We had no equipment for hot rolling and none of the workmen had any experience with it. The nickel ingots cast were about seven times larger than those we previously handled, and had to be hot rolled. So we reconstructed the machine previously used for cold rolling so that it might be used for hot rolling the large ingots.

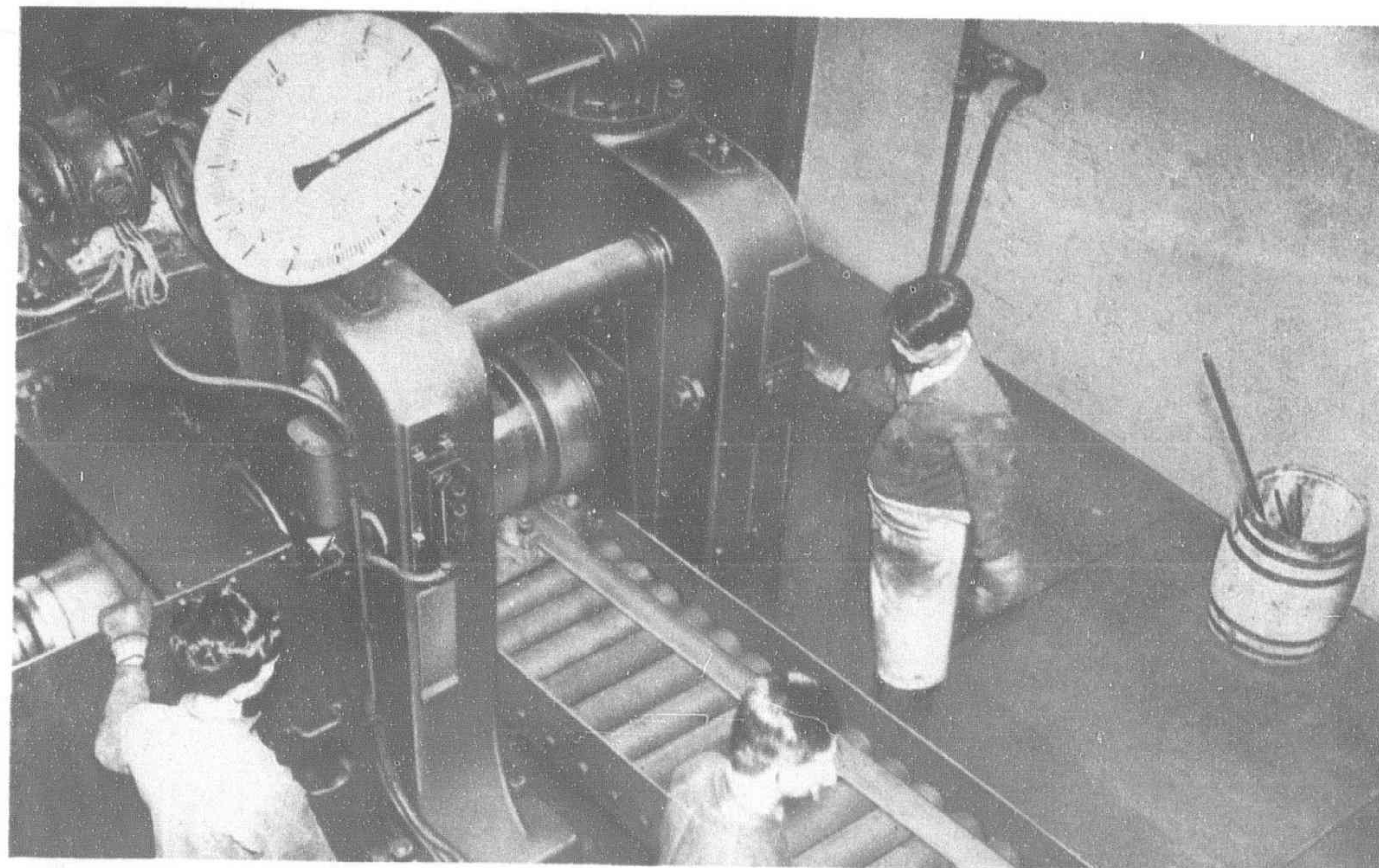
NICKEL COINAGE AT THE OSAKA MINT



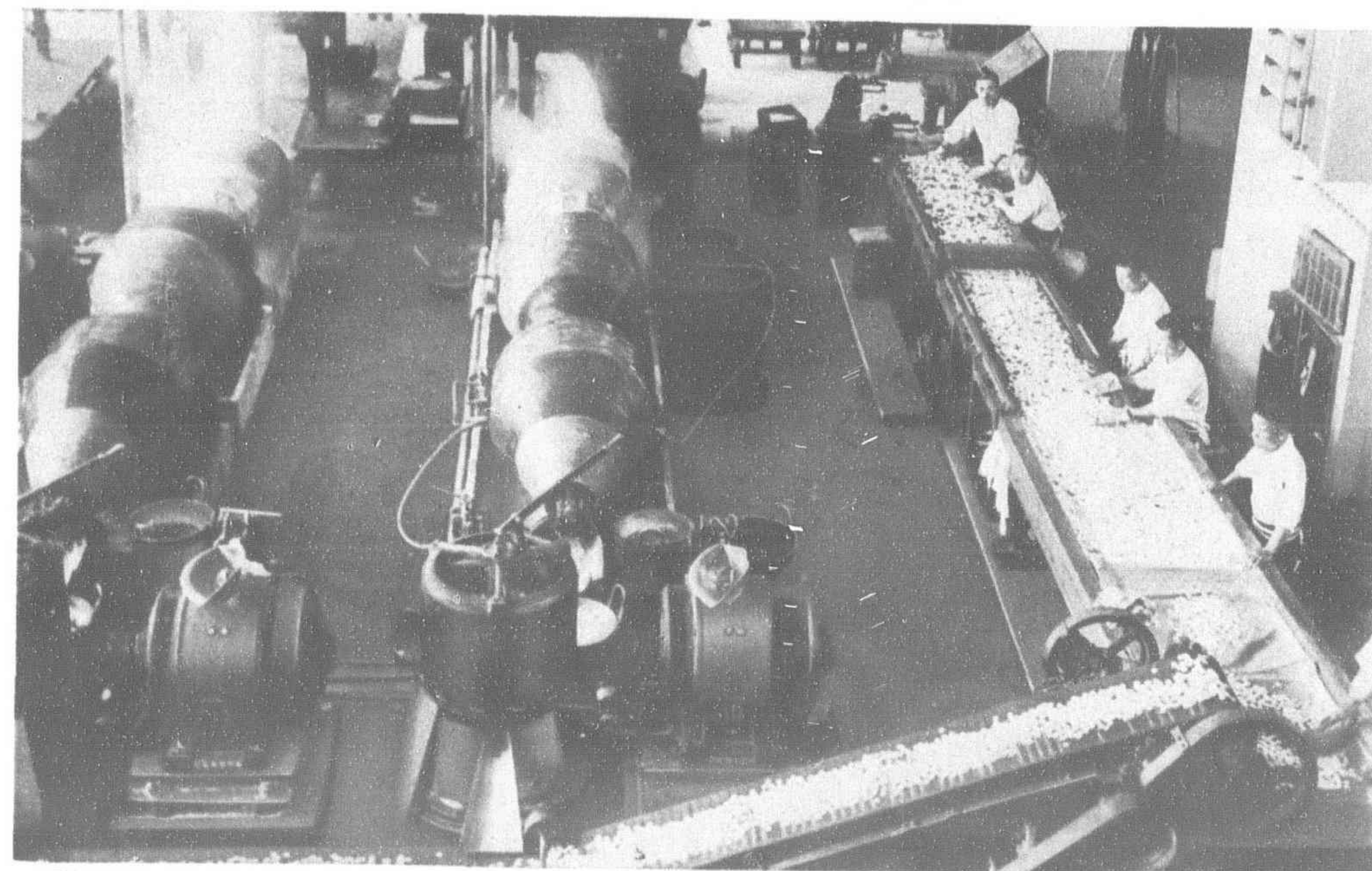
Pouring the Molten Nickel from the high frequency induction furnace. After the pouring the mold is levelled down and the nickel ingot taken out and carried to the rolls



Punching discs from strips by punching machines. The operation is automatic. Strips are conveyed to the punch, discs fall into the boxes below and scrap strips are pushed forward until they leave the press



Hot rolling on a 500 h.p. motor-driven rolling mill. Rolling is conducted 13 times, reducing the 100 mm. thick ingot to a strip 9 mm. thick. The photograph shows the 12th rolling and the graduation of the dial indicates the clearance between rolls, one division corresponding to 1 mm.



Cleaning, drying and inspecting coins. Annealed coins are washed with dilute sulphuric acid, rinsed with water, dried with centrifugal separators and put on the conveyor. Then they are carried to the electrically heated drying plate, wiped with towels and gradually brought to the circle-inspection machine where they are examined on both obverse and reverse sides and, if there is any defect, rejected. The whole process is automatic except the drying and inspection

As authoritative data on hot rolling of nickel ingots were not to be found, I conferred with my senior engineers and friends, all of whom emphasized the importance of hammering, that is, grain refining by beating with a hammer. At the outset we tried the steam hammer, and the results were fully satisfactory as far as the quality was concerned. But the process consumed too much fuel and required so much time that we should have been unable to deliver the coins by the date specified. In order to save time we were eventually driven to adopt, without consulting anyone, a method previously thought impossible.

The hot rolling mill had been installed next to the melting shop, and white ingots fresh from the mold were taken there and rolled forthwith, of course without removing the deadhead. Many failures resulted at first because the workmen were inexperienced, but we finally evolved an improved process, consisting of thirteen rolling operations performed in five minutes, by which an ingot 100 mm. in thickness was rolled into a sheet 9 mm. thick. The sheet was still at a temperature high enough for one or two additional operations had space been available, for about eight meters is needed on both sides of the rolling mills. After the hot rolling, the sheets were allowed to cool and then subjected to cold rolling.

Improvements were made in the construction of the hot rolling mill after the first minting, and during the second minting, in 1934, the time taken in rolling the ingot to a 9 mm. sheet was reduced from five to three minutes.

Our method has proved very economical and convenient. In the case of hammering, the material must be heated twice in the course of reduction to 40 mm. thickness, and thereafter it must be heated again and subjected to hot rolling. At each heating it takes longer for the heat to penetrate the ingots, resulting in higher fuel costs, whereas by our method the only extra heating is that required to keep the ingots at temperature while they are awaiting rolling. For this one furnace is sufficient and the fuel cost is small. The saving in time is immense: hammering and hot rolling require two days to accomplish what is done in three minutes by our method. The economy in labor is a big item.

Had we followed the orthodox method of hammering, it would have been impossible to roll seven tons of nickel in the time at our disposal for the first minting, and as a result the schedule for that fiscal year would have been upset beyond precedent. Yet, had the work not been so pressing we might easily have adopted the orthodox process with its greater expenditure of time and money. As it was we achieved more than success.

Mr. James A. Rabbitt of the Japan Nickel Information Bureau, who has been keenly interested in the work and gave every assistance to us from the beginning of the minting of pure nickel coinage in our Mint, came to Osaka to inspect our "expedient" method. He found the process operating smoothly and praised its simplicity. In a subsequent trip to America and Europe where he inspected factories of the nickel industry, Mr. Rabbitt said, he did not observe a method as simple as that at the Mint. Although he must have been flattering to some extent, I believe that the method we have worked out is unique.

It should be noted, however, that we had one great advantage in the fact that the work was limited to small coins. Circular pieces are stamped out of the rolled sheets, tested and minted. Those passed after the test represent about 30 per cent of the total melting, the remaining 70 per cent going back to the foundry daily as scrap.

If the final product were of large size, such as a sheet, the whole would have to be rejected even if only one flaw existed. Consequently, the surface of the ingots would have to be polished, and it might be necessary to subject them to hammering as well.

Resume Work at Hulutao Harbor

Work on the development of Hulutao harbor, interrupted since January, 1932, will be resumed this year by the Director-General of Manchoukuo Railways, an official announcement says.

The Directorate-General has allotted \$40,000,000 to complete the entire project in four years, but will spend only the \$370,000 this year to install a water supply system and to add to the work of consolidating the existing piers.

Work on the project was started in March, 1930, as the result of a contract signed on January 24, 1930, between the Peiping-Mukden Railway Administration and the Netherlands Harbor Works of Amsterdam, providing for the completion of the Hulutao Port project by the latter firm for the sum of G.\$6,400,000. It was to be handed over to the railway administration before October 5, 1935.

Following the outbreak of the Manchurian dispute, which led to the establishment of Manchoukuo, the Netherlands firm maintained their establishment at Hulutao and executed some works for the consolidation and protection of the existing constructions.

Electric Power Stations

Electric power companies in Japan are taking advantage of the prevailing wave of economic prosperity. The Tokyo Electric Light Company has decided to increase its capitalization to Y.700,000,000 in 1936. The Daido Electric Power Company recently absorbed the Osaka Electric Power Company and boosted its capital. Toho Electric Power Company intends to increase its capital by Y.70,000,000 to Y.200,000,000 for power station construction during the next seven years, as follows:—

Power stations to be built.	Generating capacity (in kilowatts)		Construction costs (Y.1,000)	
End of 1934.—	Nagoya steam station	10,000	1,000	
End of 1935.—	(Nagoya steam station	35,000	5,350	
	(Total steam power..	45,000	6,350	
End of 1936.—	Nakura water	19,500	5,200	
End of 1937.—	(Imawatari water	8,500	2,700	
	(Moriyama water	23,700	4,800	
End of 1938.—	Shimohara water	20,000	5,700	
End of 1939.—	Yamamuro water	39,000	12,200	
End of 1940.—	(Matsushima water..	31,000	9,200	
	(Total water power..	141,700	39,800	

As is seen from above, Toho Power intends to generate 186,700 kilowatts more than at present. For these enterprises, Toho Power needs Y.46,150,000. Besides, the company wants Y.34,000,000 for construction of transmission lines and sub-stations, and Y.20,000,000 for distribution lines.

Mass Production in Japan

(Continued from page 221)

	Passengers	Trucks	Special Autom's	Total
Hokkaido, and Tohoku (Aomori, Iwate, Miyagi, Akita, Yamagata, and Fukushima prefectures)	5,907	3,621	517	10,045
Kwanton (Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo and Kanagawa prefectures)	28,094	16,264	941	45,299
Hokuroku (Niigata, Toyama, Ishikawa and Fukui prefectures)	3,035	1,870	280	5,185
Tosando (Yamanashi, Nagano and Gifu prefectures)	2,772	2,114	67	4,953
Tokaido (Shizuoka, Aichi and Miye prefectures)	6,424	4,545	311	11,280
Kinki (Shiga, Kyoto, Osaka, Hyogo, Nara and Wakayama prefectures)	12,956	7,866	655	21,477
Chugoku (Tottori, Shimane, Okayama, Hiroshima and Yamaguchi prefectures)	4,746	2,879	219	7,842
Shikoku (Tokushima, Kagawa, Ehime, and Kochi prefectures)	2,184	1,318	33	3,535
Kyushu (Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima and Okinawa prefectures)	8,157	2,767	362	11,286
Total for Japan proper	74,275	43,244	3,383	120,902
Korea, Formosa, Kwantung Leased Territory and S.M.R. zone in Manchuria, Saghalien and South Sea Island under Japanese Mandate	8,500	4,891	566	13,957
Grand Total	82,775	48,135	3,949	134,859

Augmentation of Hatton Water Supply, by the Construction of a New 600,000 Gallon Reservoir

By H. E. D. PEARCE, M.C., B.SC., A.M.I.C.E., A.M.I.STRUCT.E., Public Works Department, Ceylon

PREVIOUS to 1934 the water supply of Hatton was obtained from a small reservoir in the Kotagala Forest reserve above the town.

This reservoir had an impounding capacity of only 112,000 gallons. This amount was found to be insufficient to meet the growing needs of the town satisfactorily, especially during the dry months of the year, January, February, March and April and it was decided to augment the supply. The manner in which the water supply of the town should be increased was very carefully considered.

Gaugings were taken during dry weather of the inflow into the reservoir and also at points below the reservoir at the confluence of minor streams with a view to ascertaining whether the yield was sufficiently greater down stream to warrant the consideration of providing additional storage by means of an impounding dam.

The observations did not establish the practicability of such a proposal also the situation and environments of Hatton do not afford any additional source of supply for augmentation. The solution of the problem therefore appeared to lie in conserving the surplus water available during the months preceding a drought. Although the mean annual rainfall of Hatton, for 35 years, is 143 inches, the fall in January and February is far from satisfactory. The conditions are sometimes aggravated by a poor rainfall in December.

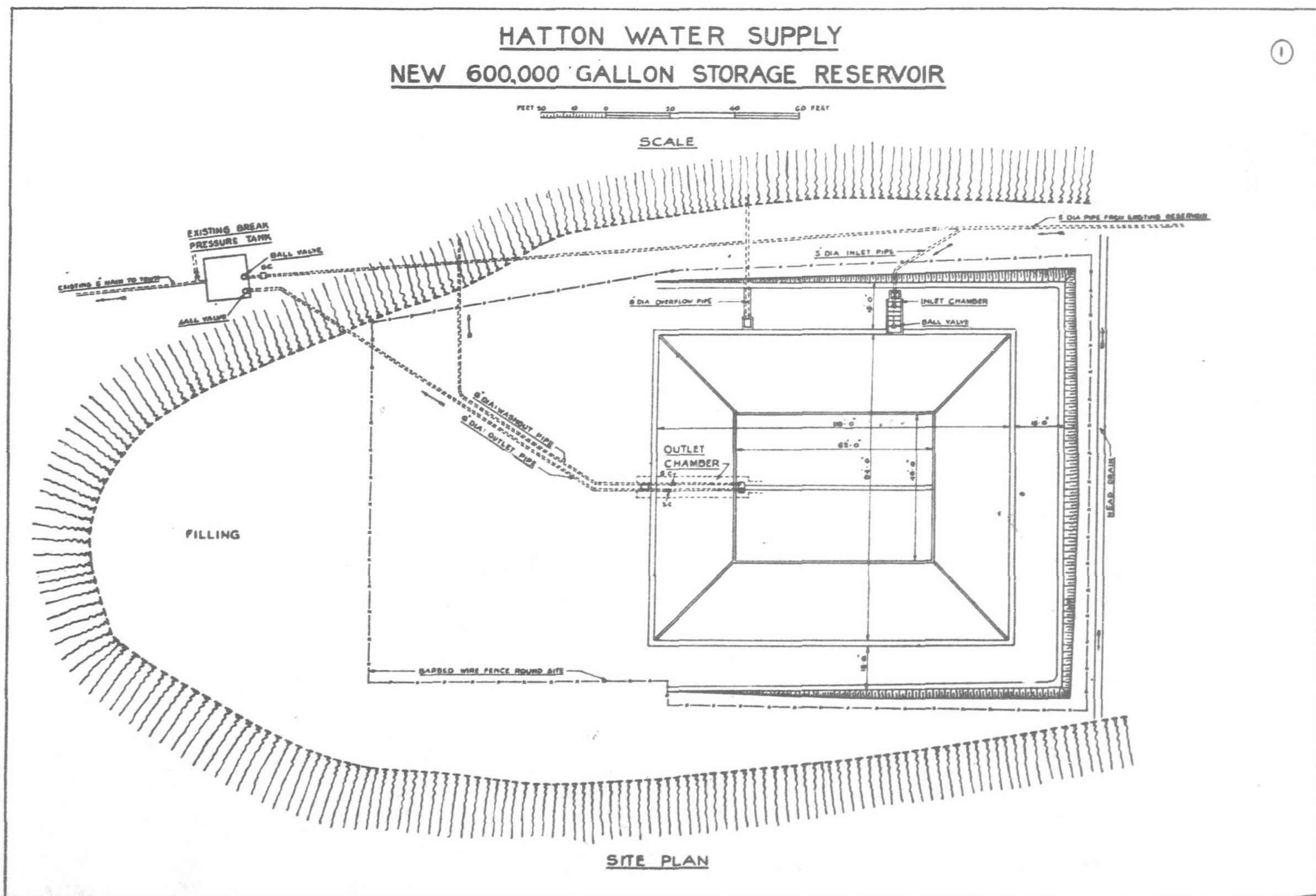
Examination of the rainfall and run-off during the eight years December, 1920—November, 1928, indicates that periods of absolute drought occurred as follows:—

1921	February	2—March	8	..	..	35 days
1922	January	12—January	26	..	..	15 "
1923	January	27—March	1	..	..	34 "
1924	January	15—February	2	..	..	19 "
	February	4—February	19	..	..	16 "
1925	January	16—February	3	..	..	19 "
1926	January	7—January	22	..	..	16 "
	January	31—March	5	..	..	34 "
1927	March	28—April	20	..	..	24 "
1928	February	13—March	14	..	..	31 "

Further examination of rainfall data shows that during the decade considered, dry periods with a total rainfall not exceeding one inch occurred as follows:—

1921	January	—March	.94-in.	..	..	47 days
1923	January	—March	.99-in.	..	..	47 "
1924	January	—February	.87-in.	..	..	43 "
1926	January	—March	.39-in.	..	..	39 "
1928	February	—March	.87-in.	..	..	46 "

From the above observations it will be seen that in order to avoid any risk of shortage, the scheme should provide sufficient storage to cover the maximum period of dry spell recorded in the figures.



Considering the limited resources of the town and the necessity for some immediate augmentation the scheme approved at the end of 1932, was for an additional storage of only 600,000 gallons of water.

It was estimated that the average minimum yield from the stream during drought would be about 2,000 gallons per day.

Neglecting however, any yield from the stream during drought the two reservoirs would together form a reserve storage supply of about 700,000 gallons.

This would mean, provided the supply to the town is controlled, a reserve of six gallons per head per day for a period of about 47 days for a population of 2,500.

The control of the supply, however, is necessary as soon as the water stops spilling over the overflow.

Owing to the fact that the new system provides for collecting the whole of the water available from sudden showers of short duration instead of only a portion of it as in the old scheme it is probable that in practice the quantity available per head over the dry season will be increased.

New Storage Reservoir

The reservoir is of the open type, with sloping sides. The internal size is 110-ft. long by 94-ft. wide at the top and 62-ft. long

by 46-ft. wide at the bottom. Depth of water 16-ft. Capacity 600,000 gallons. The general arrangement of reservoir and pipe line is shown on the accompanying drawings. It was decided to construct the new reservoir on the slope above the balance tank close to the existing pipe line and to divert the water so that the normal flow would be through the new reservoir.

In order to control the supply a ball valve was fitted at the inlet chamber.

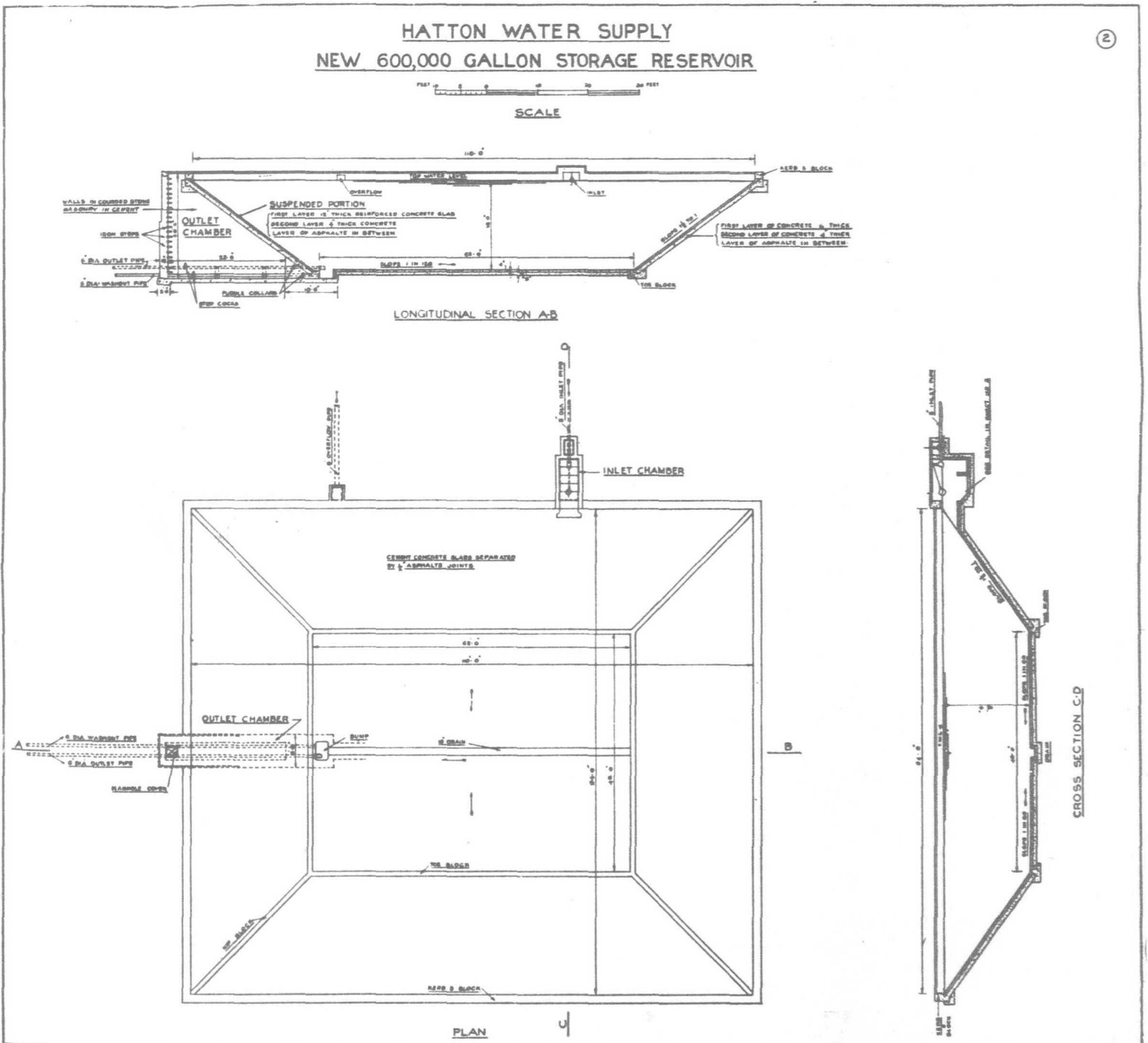
There is also another ball valve at the connection of the outlet pipe with the balance tank.

The slope of the reservoir sides is $1\frac{1}{2}$ horizontal to one vertical. This was decided upon as being the maximum at which the concrete could conveniently be laid without shuttering also in order that there should be no earth pressure at the back of the sloping sides.

No springs were encountered during the excavation.

Due to the sloping nature of the ground on each side, there would not be any upward pressure on the sides or bottom due to ground water.

The reservoir is lined with two thicknesses of concrete, the first 6-in. thick and the second 4-in. thick with $\frac{1}{4}$ -in. layer of asphalt in between. Each lining consists of a number of slabs or sections (average size 15-ft. by 7-ft.) separated by asphalt joints $\frac{1}{2}$ -in. thick, the joints in the upper layer covering the joints in the lower layer



(see sketch). Joints were put in to allow for the contraction of the concrete in drying out and also for expansion due to changes of temperature.

Taking the contraction due to drying out of 4 : 2 : 1, concrete as .0005 of the length, the number of inches contraction due to drying out in a 15-ft. slab = $.0005 \times 15 \times 12 = .09$ -in.

The co-efficient of expansion per degree Fahrenheit for 4 : 2 : 1, concrete is .000007. Allowing for a range of temperature of 100° , number of inches expansion = $.000007 \times 100 \times 15 \times 12 = .12$ -in.

From practical considerations the joints were made $\frac{1}{2}$ -in.

Excavation

The ground was first cleared of trees and a start made on the excavation.

Due to the sloping nature of the ground a good deal of excavation was necessary in order to level the site to the level of the top of the reservoir.

The site was then fixed so that the reservoir and the surrounding path should be on solid ground.

Much difficulty was encountered during the excavation due to the large amount of rock met with—this was in the nature of large boulders surrounded by hard cabook and was very hard to break up.

The excavation was not taken down to the full depth at first but a trench was dug along the line of the outlet pipe to drain the surface water.

Both in the sides and in the bottom spaces were filled up with rough concrete (6 : 3 : 1), where inequalities occurred, and the sides

were thus shaped to the correct lines and levels before the first layer of concrete was laid.

A paved stone drain was constructed along the upper bank of the excavation in such a way as to drain the surface wash and prevent this from running into the reservoir.

Concreting of First Lining

After the sides had been trimmed and prepared, and pegs defining the finished levels of concrete placed in position, preparations were made to lay the first lining.

Great care was taken to ensure that the concrete should be properly graded and mixed so that a thoroughly watertight structure should be constructed. The aggregate was graded in the proportion of three parts of broken stone 1-in. to $\frac{1}{2}$ -in. to one part of broken stone $\frac{1}{2}$ -in. to $\frac{1}{8}$ -in.

The sand was best river sand. It was stacked on special platforms constructed with rough concrete (1 : 12) and rubble sides. Precautions were taken to see that all materials were clean before using.

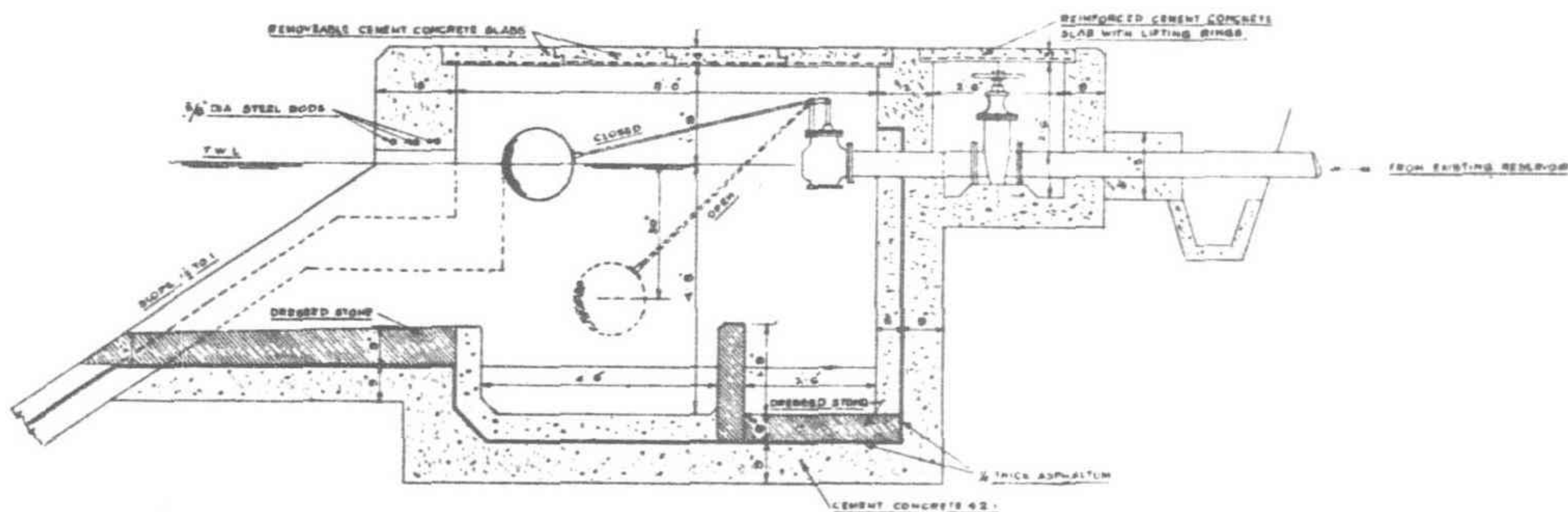
"Red hand" brand cement was used. It was transported to the site in paper bags. The paper bags proved very satisfactory and this was the most practicable method due to the steep nature of the approach.

The cement was not kept long at the site before being used and while it was there, it was adequately protected from the weather.

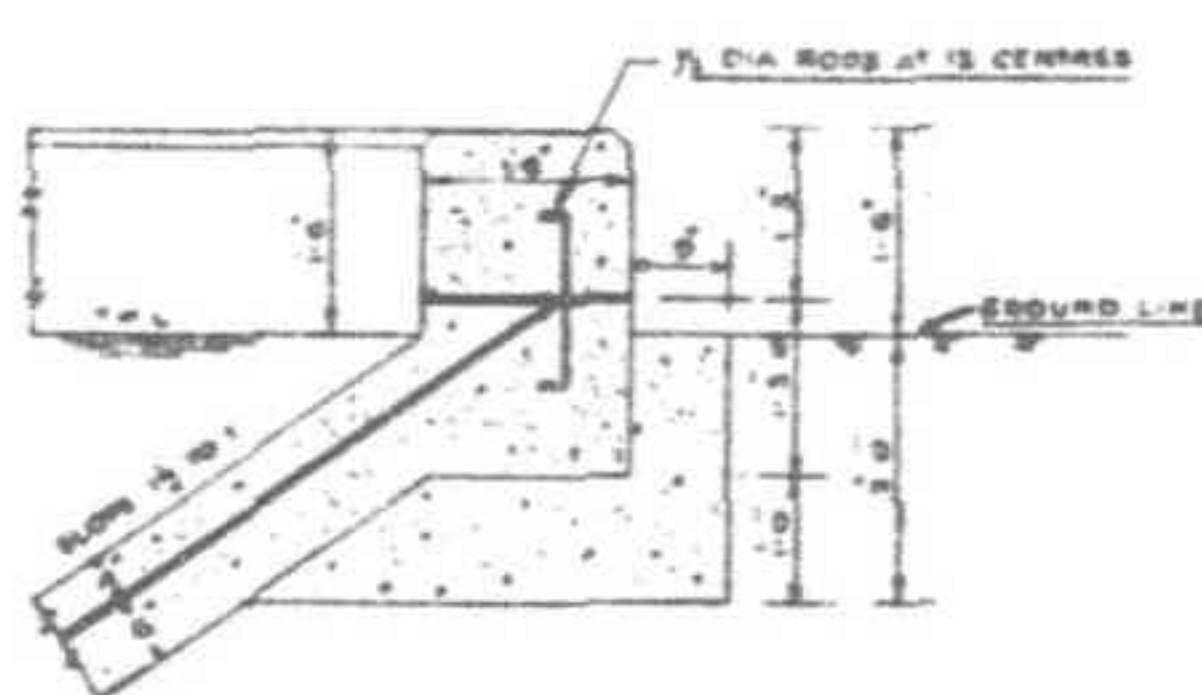
Mixing platforms constructed of rough concrete (1 : 12) were erected in various positions so that the distance for carrying the

HATTON WATER SUPPLY

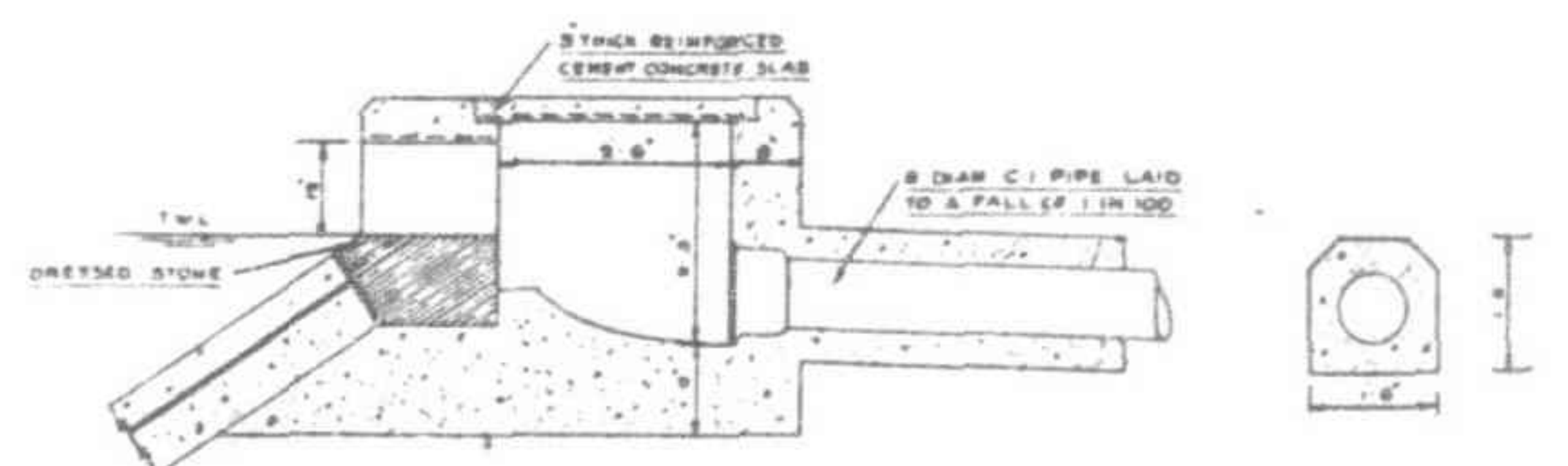
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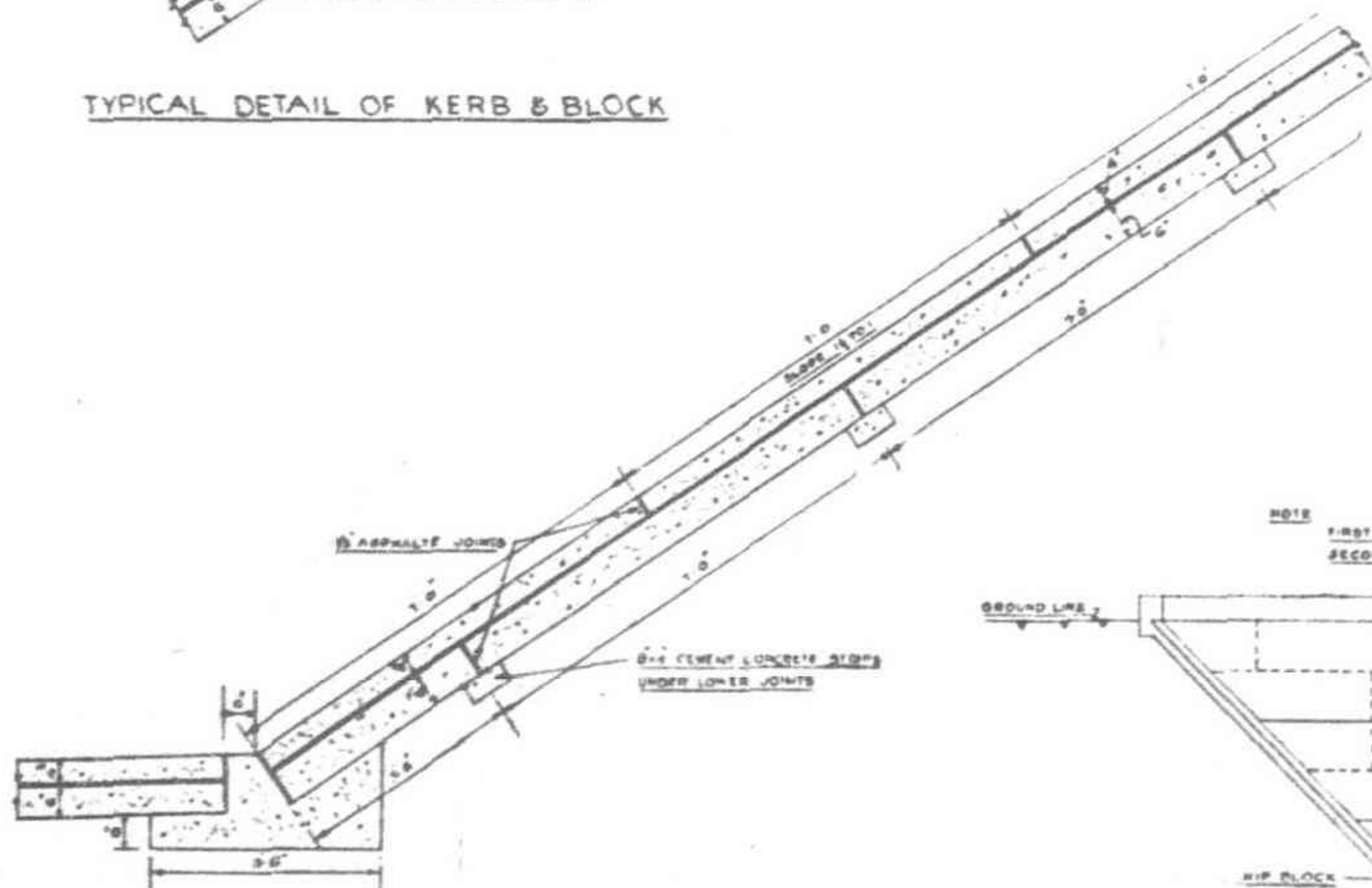
DETAIL OF INLET



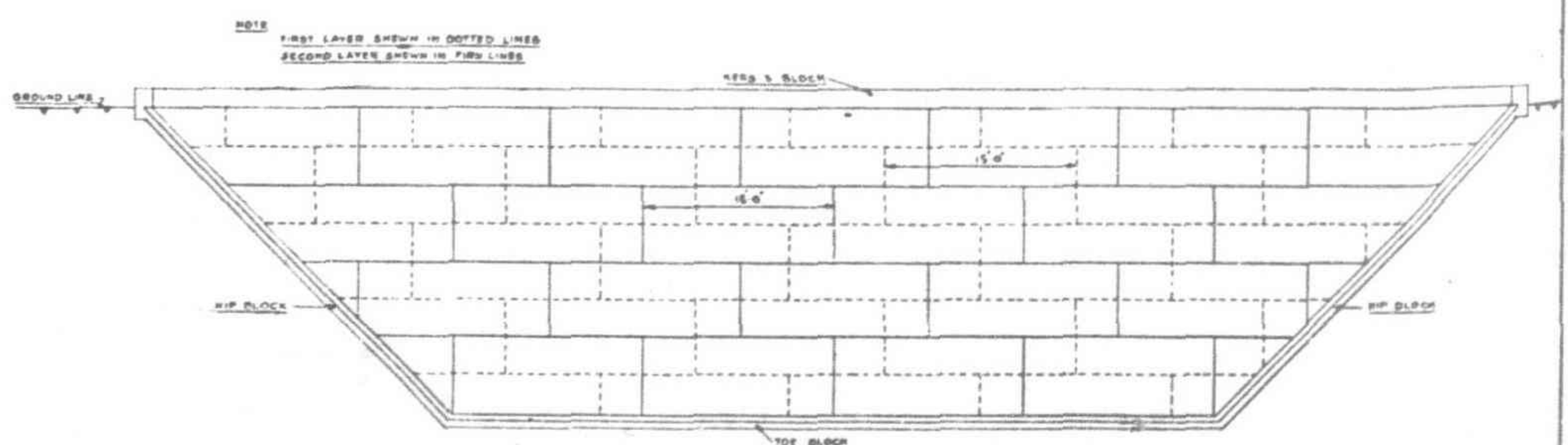
TYPICAL DETAIL OF KERB & BLOCK



DETAIL OF OVERFLOW



TYPICAL DETAIL OF TOE BLOCK ETC



ELEVATION SHOWING FIRST AND SECOND LAYERS OF CONCRETE

concrete should be as short as possible, the buckets containing the concrete being passed along from hand to hand.

The materials were thoroughly washed and graded through screens erected in convenient positions.

Separated gauge boxes were made for the sand and the cement. A pipe was laid from the stream to provide for a supply of water.

All the concrete was mixed by hand in the proportion of four parts of broken stone, two of sand and one of cement.

The unit was a bag of cement.

The amount of water used was about $5\frac{3}{4}$ gallons per cubic foot of cement.

This produced a concrete which was workable and suitable to the conditions under which it was laid.

Great care was taken during the curing to see that the concrete was properly protected from the sun and that it was kept wet for at least 21 days. Gunny bags were placed over the concrete and kept wet for this period, being constantly sprinkled with water. This was considered very important as the permeability for concrete kept moist during the period of curing is much less than that of concrete in which this precaution has not been taken.

The slabs were cast in alternate bays to allow sufficient time for setting before the adjacent slab was cast. Each bay was constructed in a continuous operation without any interruption.

In constructing the sides, it was found convenient to construct the hip blocks first, shape off the sides to the required slope, then construct the toe blocks after which the concrete slabs could be laid working from the bottom upwards. 8-in. by 4-in. strips of 4 : 2 : 1, concrete were laid under all the lower joints in the floor and the sides.

In each layer the four sides were cast in rotation and the bottom of the reservoir was constructed last.

Construction of Asphalt Joints

Half-inch wooden screeds were left in during the placing of the concrete so as to form joints between the slabs.

The screeds were greased and iron handles were attached so that they could be pulled out later.

The asphalt joints were constructed about one month after the concrete slabs were laid. The joints were dried and carefully cleaned out before the asphalt was poured.

Socony asphalt Grade 102 was used.

The asphalt was heated in a 60 gallon tar boiler to a temperature of 350° to 400° and placed in the joints by pouring from receptacles with V shaped spouts.

Fine sand was mixed in sufficient quantities to prevent the asphalt from flowing straight down the side and also to give substance to the mixture. Only just sufficient sand was added to form a plastic mixture.

The joints were constructed in three pourings, the jointing material being consolidated firmly each time with an iron tool, care being taken not to damage the slabs on each side.

Intermediate Layer of Asphalt

After the first layer of slabs had been completed a layer of asphalt $\frac{1}{4}$ -in. thick was spread over the whole of the inner surface of the reservoir to form an intermediate impervious lining between the upper and lower layers of concrete. Care was taken to see that the asphalt in the joints below was thoroughly punned in. Delay was caused from time to time in the progress of the work due to rain. The surface of the concrete had to be thoroughly dry as otherwise the asphalt would not have adhered to it.

This asphalt lining was laid at dry periods when rain was not likely to fall.

It was dried out without the addition of any sand.

Construction of Second Lining

The second lining of concrete slabs was now laid. The thickness of concrete being 4-in. and the mixture the same as that for the lower layer, i.e., 4 : 2 : 1.

A feature of the construction was that the lines of asphalt joints in the upper layer should not occur immediately above those in the lower layer at any place in the reservoir.

As in the lower layer, the slabs were cast on the alternate bay system and each bay was constructed in a continuous operation.

The joints for the second lining were formed by means of asphalt joints $2\frac{1}{2}$ -in. thick finished with cement concrete joints (1 : 4), $1\frac{1}{2}$ -in. thick.

A concrete kerb 1-ft. 6-in. wide and 1-ft. 6-in. above ground level was constructed along the top of the reservoir.

Inlet Arrangements

A Y connection was made with the existing 5-in. pipe line and a new 5-in. C.I. pipe line was laid to the inlet chamber.

Details of inlet are shown on the drawings.

A stop cock is provided at the entrance.

The inlet chamber is divided into two portions by a dressed stone baffle wall 6-in. thick and 1-ft. 9-in. high.

The inlet chamber cover is formed of precast concrete slabs 4-in. thick. Dressed stone linings are provided for the floor of the baffle chamber also for the sill.

A 5-in. equilibrium ball valve is fixed in order to control the supply.

Outlet Arrangements

The detailed arrangement is shown on the drawings. The walls of the outlet chamber were constructed of coursed stone masonry in cement mortar with the interior joints pointed.

The portion of the reservoir slab suspended over the chamber was constructed in two thicknesses the first being a reinforced slab 12-in. thick and the second plain concrete 4-in. thick. There were no joints to the lower layer and this was constructed in a continuous operation. Joints were provided in the upper layer. For the top 2-in. of the upper layer, pudlo was mixed with the cement in the proportion of 5 lbs., of pudlo to 100 lbs. of ordinary cement. The delivery pipe and the washout pipe are controlled by stop cocks in the outlet chamber. There is a manhole at the top and iron steps are provided down to the interior of the chamber.

Both the delivery and the washout pipe lines were constructed with 6-in. C.I. pipes. A 6-in. ball valve was fixed to control the supply at the entrance of the delivery pipe to the balance tank.

Washout

A 6-in. C.I. washout pipe was arranged so as to empty into the stream.

When it is required to clean the reservoir, the supply to the town is deflected so as to run through the original 5-in. pipe.

There is thus no interruption of supply to the town while the cleaning is being done.

The bottom of the reservoir is sloped towards a central drain 18-in. wide running down the middle.

Overflow

An overflow pipe constructed with 9-in. C.I. pipes was arranged as shown on the drawings.

Control of Supply

The supply is to be controlled by means of a Guest and Chrimes automatic recording turbine meter.

From the daily observations marked on the recording drum of this meter, the supply can be carefully controlled.

Cost

The original estimate sanctioned was for Rs. 34,000.00. Due however, to certain modifications in the design, the large amount of rock met with in the course of excavation and the provision of an improved type of recording meter, application was made and sanction was obtained for the expenditure of a further amount of Rs. 3,900.00.

Considering the capacity, the cost of this reservoir is very reasonable in comparison with other types.

General

The approach to the reservoir is very steep and all the materials with the exception of the aggregate had to be transported by hand to the top temporary buildings (a store and an office) were erected close to the reservoir and careful records were kept showing the progress of the work from day to day.

Delay was often caused during the construction due to the wet weather experienced.

The reservoir has now been in use for some months and, from the tests carried out it has proved very satisfactory. The design was prepared in the Head Office and is the first of its type in Ceylon.

In conclusion my thanks are due to Mr. S. Mahadeva, in charge of the P.W.D. Designs Branch for reading over this paper and making various suggestions, also to Mr. W. J. Thornhill, Director of Public Works, for his kind permission to have access to official records.

Engineering Notes

INDUSTRIAL

PLANNING NEW HOSPITAL—Plans are being made by high government officials for the establishment of a new hospital in Nanking, devoted to the improvement and application of Chinese medicine. \$60,000 is understood to have been raised as the initial fund for the project.

DEVELOPMENT IN NORTH CHINA—The Kabushiki Kaisha Kochu Koshi (China Development Co., Ltd.), which is to become central organization for Japanese development of North China, will be capitalized at Y.10,000,000, with its head office in Dairen and branches in Tientsin, Shanghai and Tokyo. The object is to act as a medium for the export and import trade among Japan, Manchoukuo and China, to aid investments in Manchoukuo and China, as well as the starting of economic enterprises in these regions, and to conduct all other incidental business affairs.

INDUSTRIALIZATION OF MANCHOUKUO—Near the S.M.R. Station at Mukden, a new industrial area is being opened up. According to the Japanese authorities thirty-five concerns have completed construction of their plants, and thirty-one of this number are already operating. The Japan-Manchoukuo Leather Co., the Domestic Electric Appliances Co., the Manchoukuo Potteries and the Manchoukuo Brewery are the latest additions. A woollen textile factory and a grain-hulling plant are to be completed in the near future and enquiries are in hand from a dyeing company, the Imperial Oxygen Co., a paper factory, and a manufacturer of medicines.

JAPANESE ALUMINIUM PLANT—Japan Soda Industry Co., known as the N.S.K., has decided to undertake aluminium reduction, and for this purpose has set aside Y.2,500,000. Already there are four aluminium companies in Japan, the Japan Electric Industry, Nichiman Aluminium, Sumitomo Aluminium and Japan Aluminium interests. Excepting the last-mentioned, now building a large plant in Formosa to start operation late this year, they are already in operation. Japan Soda will build its plant at Aizu, Fukushima Prefecture, and conduct operations using import bauxite. The company recently founded the Kyushu Soda Co. with a capital of Y.10,000,000, and has also decided to assume control and management of the Fukui Rayon Co. Japan Soda capitalized at Y.10,000,000.

NEW GRANARIES—Spurred by shortage in years of famine, the Kiangsi Provincial Government has laid down a comprehensive plan for the construction of a chain of granaries to facilitate the supply and distribution of food. A central granary capable of hoarding 500,000 piculs of rice will be constructed at Nanchang, where waterways, highways and railways converge. In Linchuen and Chian, on the Yu and Kan Rivers respectively, which are both rice-producing centers, granaries, each capable of storing up about 250,000 piculs of rice, will be constructed. Along the valleys of the Kan River and the Hsin River granaries, each capable of storing about 100,000 piculs of rice, will be constructed at Kan Hsien and Hokou respectively. Meanwhile a central godown will be constructed at Kiukiang, and godowns at Hsufu and Changshu.

MANCHOUKUO BEAN ELEVATORS—The German Economic Mission, which has been on a visit to Manchoukuo, is planning to establish bean elevators in various parts of the country, these to be built with German and Manchoukuo capital. The idea is that Germany should supply machinery and rolling stock in return for beans, the business to be conducted through the Deutsch-Asiatische Co. in Harbin, which is closely connected with large machinery and rolling stock manufacturers in Germany. Though Germany consumes approximately 1,000,000 tons of soya beans annually, these are bought through London, and the Reich has no direct transactions with Manchoukuo. As the Manchoukuo authorities consider the sale of German machinery would have an important bearing upon the Japan-Manchoukuo bloc, the negotiations will be watched with great interest.

COMMUNICATIONS

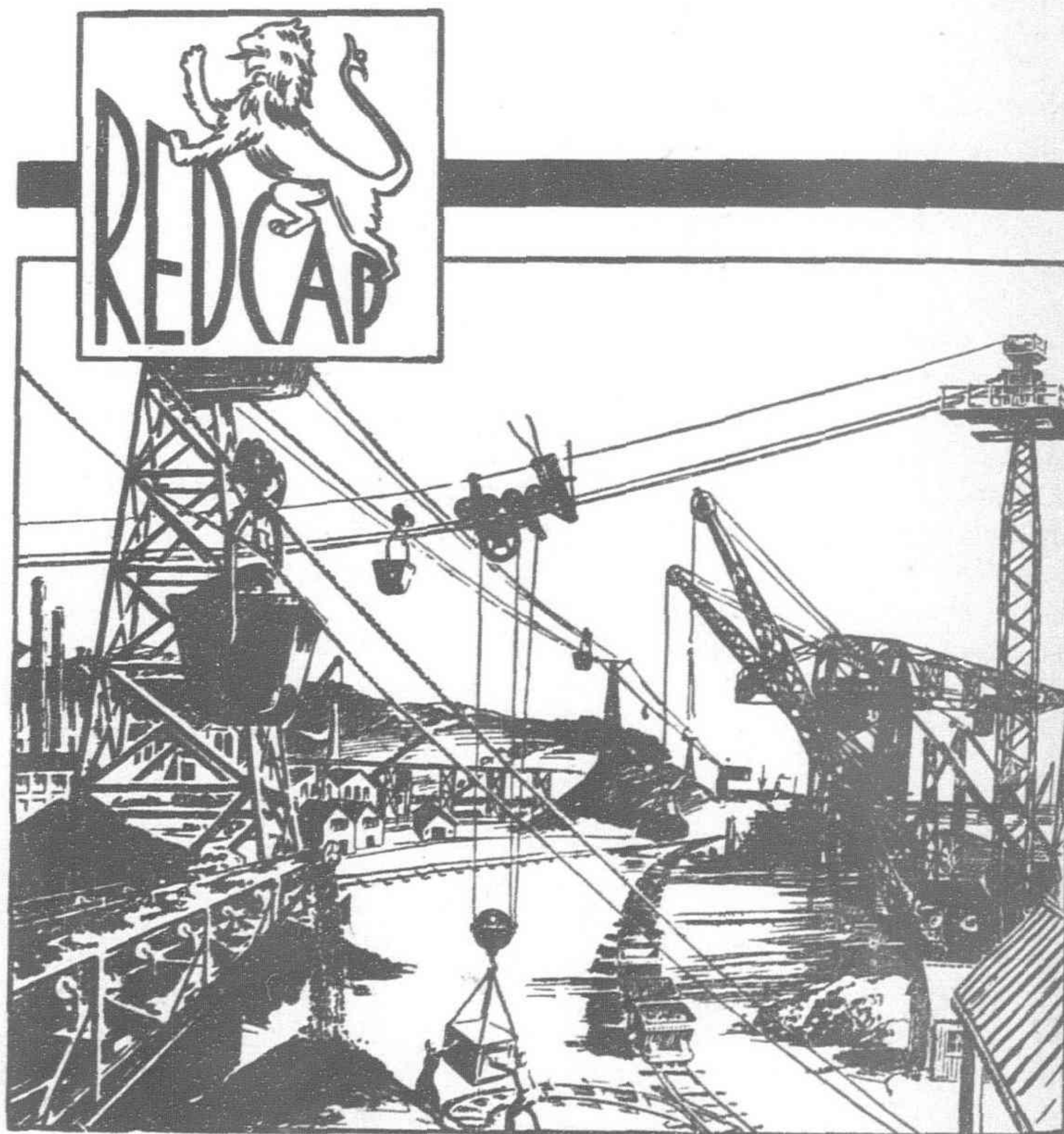
JAPAN-LOOCHOO PHONE—Work on the establishment of long-distance telephonic communication between the main islands of Japan and the Loochoo Islands, which has been under way for some time, will be completed shortly, has been announced by the Ministry of Communications. The Service will be opened for public use in June. Inauguration of the service will mark the completion of the network of long-distance telephone lines linking all the provincial capitals.

KAN RIVER BRIDGE—With the foundation work at both banks completed, it is announced that the steel bridge of the Nanchang-Kiukiang Railway across the Kan River between Nanchang and Niuhsing Stations will be ready for traffic by the end of this year. The bridge will be named the "Chung-cheng Bridge," in recognition of General Chiang Kai-shek's great services in bandit-suppression and reconstruction work in Kiangsi province. "Chung-cheng" is the courtesy name of General Chiang. The cost of the bridge will be \$280,000 and will be paid by the Ministry of Railways.

ELEVATED RAILWAY—Japanese capitalists have been approached by a group of American, British, French, and Belgian interests with a proposal to join in the organization of a \$2,000,000 elevated railway company in Shanghai. The *Shanghai Mainichi* says the line would link Nantao with the new Civic Centre in Kiangwan. The Japanese attitude towards the proposal is unknown.

PHONE FOR CHINESE BORDER—A sum of \$18,000,000 will be needed for development of the telephone system in the five frontier provinces of Szechuen, Yunnan, Kweichow, Shensi and Kansu, according to estimates prepared by the Ministry of Communications. Besides appropriating part of the \$10,000,000 telegraph loan, the Ministry will devise other means to raise sufficient funds for installation of the network.

SMEETING IN JAPAN—The Tokyo Ministry of Commerce and Industry has decided to encourage production of steel. Demand for pig-iron for 1936 is estimated at about 1,400,000 tons, but the supply from Japan and Manchoukuo together will be only 850,000 to 900,000 tons. Applications for permission to erect smelters have been filed by five new companies. Japan iron would build a 1,000 ton smelter at its Yawata foundry. Asano Kokura Steel wants permission for a 250 ton smelter, Nakayama Steel wants a 300 ton smelter, Asano Shipbuilding wants a 300 ton smelter, and Japan Steel Tubing wants a 400 ton smelter.



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